U.S. Coast Guard Oceanographic Report

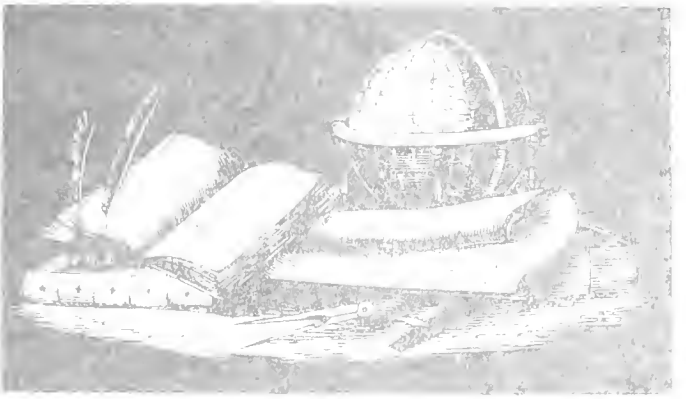
UNITED STATES COAST GUARD

OCEANOGRAPHIC REPORT No. 31

CG 373-31

OCEANOGRAPHY OF THE WEDDELL SEA (IWSOE)

February–March 1969



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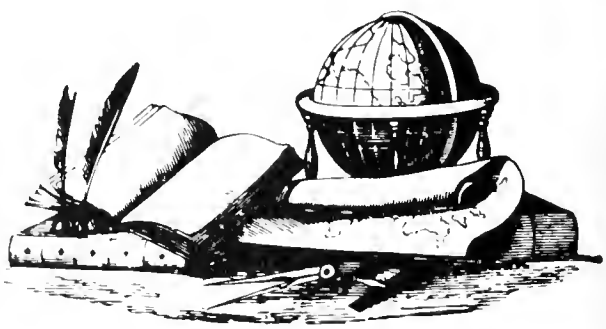

UNITED STATES COAST GUARD OCEANOGRAPHIC UNIT

REPORT No. 31 CG 373-31

OCEANOGRAPHY OF THE WEDDELL SEA IN 1969 (IWSOE)

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and
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COAST GUARD
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Abstract

This report discusses the physical oceanography of the Weddell Sea during the austral summer of 1969. The work was done on the icebreaker USCGC GLACIER (WAGB–4) as part of the second phase of the International Weddell Sea Oceanographic Expedition. Temperature, salinity, and oxygen measurements were obtained from a salinity-temperature-depth recorder and from Nansen bottles.

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OCEANOGRAPHY OF THE WEDDELL SEA (1969—IWSOE)

Introduction

Deacon (1963) indicated that the Weddell Sea is the largest source of Antarctic Bottom Water (−0.4° C., 34.66‰). The generally accepted theory states that it is a mixture of warm deep water and water formed on the Antarctic continental shelf. The shelf water gets its particular properties by convection due to cooling and ice formation during the winter. Owing to the nonlinear dependency of density of seawater on temperature and salinity, the processes determining the formation of Antarctic Bottom Water are hampered or even prevented until a certain stage has been reached. The formation of Bottom Water may, therefore, appear as a sudden flow, with a perceptible current speed (Fofonoff, 1956).

In the summer of 1968, the icebreaker USCGC GLACIER (WAGB–4), modified for oceanographic research, became available for the International Weddell Sea Oceangraphic Expedition (IWSOE) under the coordination of the National Science Foundation. The major purpose of the expedition was to study the formation of Antarctic Bottom Water. From the data of IWSOE '68, Elder and Seabrooke (in press) proposed a theory for the formation of Antarctic Bottom Water in the summer. They found the shelf water below 200 meters in the southwest Weddell Sea to be sufficiently dense to flow down the slope and mix with the warm deep layer and form Antarctic Bottom Water. Analysis of the data indicated that the dense shelf water did not form at the air-sea interface nor was it transported in from other areas. Bathymetric data indicate it was not water formed in the winter, trapped on the shelf, and prevented from flowing off the shelf. They concluded that the dense water was formed on the continental shelf by contact with the underside of the Filchner and Ronne Ice shelves.

The IWSOE '69 is the second phase of the oceanographic program carried out in the Weddell Sea and is a direct continuation of IWSOE '68. The USCGC GLACIER, Captain E. C. McCory, USCG, commanding, was assigned for the cruise. In addition to the already existing oceanographic facilities, a new level luffing crane with a trawl winch was installed to give piston coring and heavier dredging capabilities to the ship.

IWSOE '69 Programs

A number of institutions took part in the expedition conducting the following programs:

University of Bergen: To evaluate the theories of the formation of Antarctic Bottom Water, Dr. Thor Kvinge of the University of Bergen installed four current meter buoy arrays on the continental shelf near 74° S., 40° W. during IWSOE '68 to measure currents and temperature throughout the winter. One of the primary objectives of IWSOE'69 was to recover the current meters.

The University of Connecticut: Dr. John S. Rankin of the University of Connecticut studied the population density and diversity of the deep sea benthos of the Weddell Sea using an anchor dredge and an epibenthic sled.

The University of Minnesota: A program to study the population dynamics of Antarctic seals was conducted by Dr. Albert W. Erickson of the Bell Museum of Natural History, University of Minnesota. The seal census was conducted from the air by helicopter as well as from the ship. Specimens were also captured and blood samples taken for studies of phylogenetic and population of relationships.

The University of California, Los Angeles: Sedimentation processes operating in the Weddell Sea were studied by Richard D. LeFever of the Department of Geology, University of California, Los Angeles. A modified Ewing pis-

ton corer 20 feet in length was utilized to obtain sedimentary material. The cores were returned to the United States where they will be exposed to X-rays to determine the types and extent of sedimentary structures which are not otherwise visible. In addition, chemical analyses will be made on the sediments to determine carbonate or sulfate concentrations and source rock composition.

The U.S. Coast Guard Oceanographic Unit: The program conducted by the U.S. Coast Guard Oceanographic Unit consisted of physical oceanographic measurements, determinations of dissolved oxygen, pH, and nutrients, and bottom photography. Personnel making up the Unit's field party included:

Gary L. HUFFORD	Oceanographer
LT James M. SEABROOKE, USCG	Oceanographer
MSTI Peter R. SAN JULE, USCG	Oceanographic Technician
SO2 Robert C. MURRELL, USCG	Oceanographic Technician
MST2 Kenneth THOENI, USCG	Oceanographic Technician
YN2 Dwight E. OLSON, USCG	Oceanographic Technician
MST3 Bruce B. EDWARDS, USCG	Oceanographic Technician

Initially, the cruise was to be conducted over an eighty day period, starting in early January and ending on April first. However, GLACIER was assigned to first break a channel to McMurdo Station and met unexpectedly heavy ice concentrations, which delayed the start of IWSOE '69 until mid-Februry. The cruise lasted till March 24, 1969.

Station Procedure

On February 13, GLACIER departed Punta Arenas, Chile. It was tentatively agreed to concentrate the investigations in the southeastern part of the Weddell Sea in the area of the current meter arrays planted during IWSOE '68 until their recovery. However, the ship ran into heavy ice that was impenetrable sixty miles from the current meter arrays. After several unsuccessful attempts were made, it was necessary to abandon recovery of the arrays during IWSOE '69. A series of stations were then taken in the area.

The initial procedure followed by the ship upon arriving at station depended largely on ice conditions. During IWSOE '69 heavy ice concentrations were encountered, and only twenty-seven oceanographic stations were taken. It was usually possible to ease the ship's bow into an ice floe and by slowly turning the screws, hold the bow in the floe until it froze, at the same time clearing a small area on either side aft of brash ice. This provided a clear area in which to lower oceanographic equipment. This procedure was adopted instead of the one utilized during IWSOE '68, i.e., easing the starboard side against a floe. It was necessary to keep both sides clear for work due to the addition of a starboard luffing crane and winch.

Although station plans were constantly changing owing to a number of circumstances, a station usually consisted of a Nansen cast, bottom photography, an STD cast, piston coring and bottom trawls and dredges.

Satellite navigation contributed greatly to the success of station position determination. No navigational aids are available in the Weddell Sea, and celestial navigation is hampered by generally overcast skies. Since the accuracy of satellite navigation is not affected by either clouds or indistinct horizon, use of this method during the expedition yielded accurate positions.

Data Acquisition and Initial Analysis

A summary of data collected at each station is presented in table 1.

Temperature Data

Teflon-lined Nansen bottles were equipped with two protected reversing thermometers and, at alternate depths below 150 meters, with unprotected thermometers. Sampling depths were approximately 0, 10, 25, 50, 75, 100, 150, 200, 300, 400, 500, 600, 700, 800, 1000, 1250, 1500 meters and at 300 meter intervals below 1500 meters, except that several bottles were placed at 25 meter intervals near the bottom.

With the ship firmly held in the ice on most stations, a zero wire angle was generally obtained and an acoustic depth-telemetering pinger was placed on the wire to make it possible to obtain samples within a few meters of the bottom.

Table I. Summary of Data Collected at Each Station.

Station	Date	Time (GMT)		Position		Depth of Water	Maximum Sampling Depth-Nansen STD	Nansen	STD	Bottom Bio	Cores	Bottom Photo.	Seal Census
	1969	On	Off	LAT S	LONG W	(meters)							
0001	24 Feb	0120	1824	74–31.6	30–18.9	513	510	X		X	X		X
0002	25	0100	1454	75–31.5	30–08.3	378	375	X	X	X	X		X
0003	26	0230	1020	76–38.1	31–48.4	436	434	X			X		X
0004	26	1730	2350	77–05.4	35–02.6	803	800	X		X	X		X
0005	27	0800	1730	77–19.7	36–41.3	1065	1063	X	X	X	X		X
0006	28 Feb–01 Mar	2330	0900	76–50.2	40–55.4	513	510	X		X	X		X
0007	01 Mar	1305	2050	77–16.0	42–38.3	500	495	X		X	X		
0008	02	0112	1054	77–38.5	42–27.8	570	565	X		X	X		X
0009	03–04	2110	0245	77–54.2	45–13.3	250	246	X		X	X		
0010	04	1215	2045	77–50.0	42–05.2	657	655	X		X	X		X
0011	05	1700	2300	77–10.2	38–40.8	820	815	X		X	X	X	X
0012	06	1645	2330	77–18.9	37–42.3	988	985	X		X	X	X	X
0013	07	0600	0900	77–50.2	35–32.9	343	341	X	X				
0014	07	1245	1610	77–22.0	34–29.2	362	360	X	X				X
0015	08	0300	0645	76–52.9	32–49.7	375	372	X	X		X		
0016	09	0230	0630	74–40.0	31–04.1	510	508	X	X				
0017	09	1355	1638	74–19.0	32–28.6	591	590	X	X				X
0018	10–11	0112	1418	74–15.0	32–30.0	640	240	Current Meter Station					X
0019	11–12	1715	0100	74–06.3	32–36.2	1447	1445	X		X	X	X	X
0020	12	1008	1850	73–49.4	31–40.9	2317	2314	X		X	X	X	X
0021	13	0500	1616	73–52.0	31–17.6								
0022	14	0045	0958	73–29.0	30–24.1	3035	3035	X		X	X		X
0023	14–15	1448	0540	72–47.5	30–28.3	3658	3658	X		X	X		
0024	15–16	2104	0950	71–36.1	30–36.1	3840	3800	X		X	X		X
0025	16–17	2348	0506	70–38.8	33–32.3	4343	4340	X				X	
0026	17–18	2148	1204	68–36.8	32–03.6	4483	1090	X		X	X		
0027	19–21	2344	1725	64–50.6	41–24.7	4572	4572	X		X	X		

Standard analysis procedures were used for correcting thermometers and determining thermometric and accepted depths. Use of the shipboard computer made accurate real time data analysis and quality control possible on board.

Salinity Determination

Salinity was determined using an inductive salinometer, and the onboard computer.

Oxygen and pH

Dissolved oxygen and pH were determined on all the water samples using the methods described by Strickland and Parsons (1965). From the oxygen data, percent saturation and apparent oxygen utilization were calculated giving a gross estimate of biological activity.

Nutrient Analysis

Water samples were analyzed at sea for inorganic phosphate, nitrate, nitrite and silicate using the methods described by Strickland and Parsons (1965). The ultraviolet spectrophotometer was shock-mounted to counteract the continual vibration of the ship in breaking ice. This arrangement worked quite well.

Frozen samples for ammonia and total phosphous were returned to the U.S. Coast Guard Oceanographic Unit for later analysis. Due to problems with the distilled water and de-ionizer, the data will be given in a later report.

Salinity-Temperature-Depth System (STD)

A continuous trace of temperature and salinity versus depth was obtained at only 8 stations due to malfunctions of the salinity sensor. A Nansen bottle was attached to the STD wire just above the sensor unit for calibration of the STD data.

Bottom Photography

A Thorndike (1959) type bottom contact camera system was used for bottom photographs. The camera system was set up to take a photograph when the camera lens was three feet above the bottom and at a sixty-degree angle from the vertical. The ship's photographer developed the film. the compass-oriented photographs revealed many benthic organisms as well as current ripple marks.

Results of Preliminary Analysis

Due to the limited number of oceanographic stations (27) only one vertical section was selected for analysis (figure 2–7).

Analysis of the data using preformed nutrients (figures 5–6) as well as temperature and salinity (figures 2–3) indicate that three water masses were present in the southeast Weddell Sea (table 2). These were the water mass found on the continental shelf; a warm intrusion which was found from about 400 meters to 1600 meters depth off the shelf; and the bottom water mass which may or may not be Antarctic Bottom Water.

The temperature and salinity distribution of the shelf water and warm deep water showed that the bottom water present could not be produced by mixing of these two masses (figure 2–3). Deacon (1937) postulated that the formation of Antarctic Bottom Water takes place only in the southwestern Weddell Sea. Elder and Seabrooke (in press) found formation of Antarctic Bottom Water in the southwestern Weddell Sea, (west of 40° longitude) during IWSOE '68 by mixing of dense shelf water with warm deep water. Data from IWSOE '69 indicates that Antarctic Bottom Water formation does not take place in the southeastern Weddell Sea (east of 40° longitude) in the summer.

A question arises as to where the bottom water comes from in the cross section for IWSOE '69. Bottom photographs obtained from the USNS Eltanin and IWSOE '68 (Hollister and Elder, 1969) indicate a westerly flowing bottom current which follows the bathymetric contours in the southern Weddell Sea. Only a few photographs were obtained during IWSOE '69, but they also suggest a westerly flowing bottom current. Therefore, the bottom water present in the southeast Weddell Sea in 1969 may be part of the westerly flowing Antarctic coastal current which is evident only in the Weddell Sea area, where an extensive cyclonic motion occurs to the south of the Circumpolar current (Sverdrup, Johnson and Fleming, 1942). Further investigation is being conducted to determine the origin of the bottom water found in the southwestern Weddell Sea. Data collected during IWSOE '70 will hopefully add light to the problem.

Table II. Mean Characteristics of water masses present in the Weddell Sea in February 1969.

Year	Water Mass	Temperature	Salinity	Preformed Nutrients (μg-at/l) Phosphate	Nitrate
1969	Shelf Water	−1.60° C	<34.60‰	1.65±.19	22.37±2.46
	Warm Intrusion	0.40° C	34.67‰	1.15±.22	14.57±2.89
	Bottom Water	−0.26° C	34.66‰	1.31±.12	17.38±2.10

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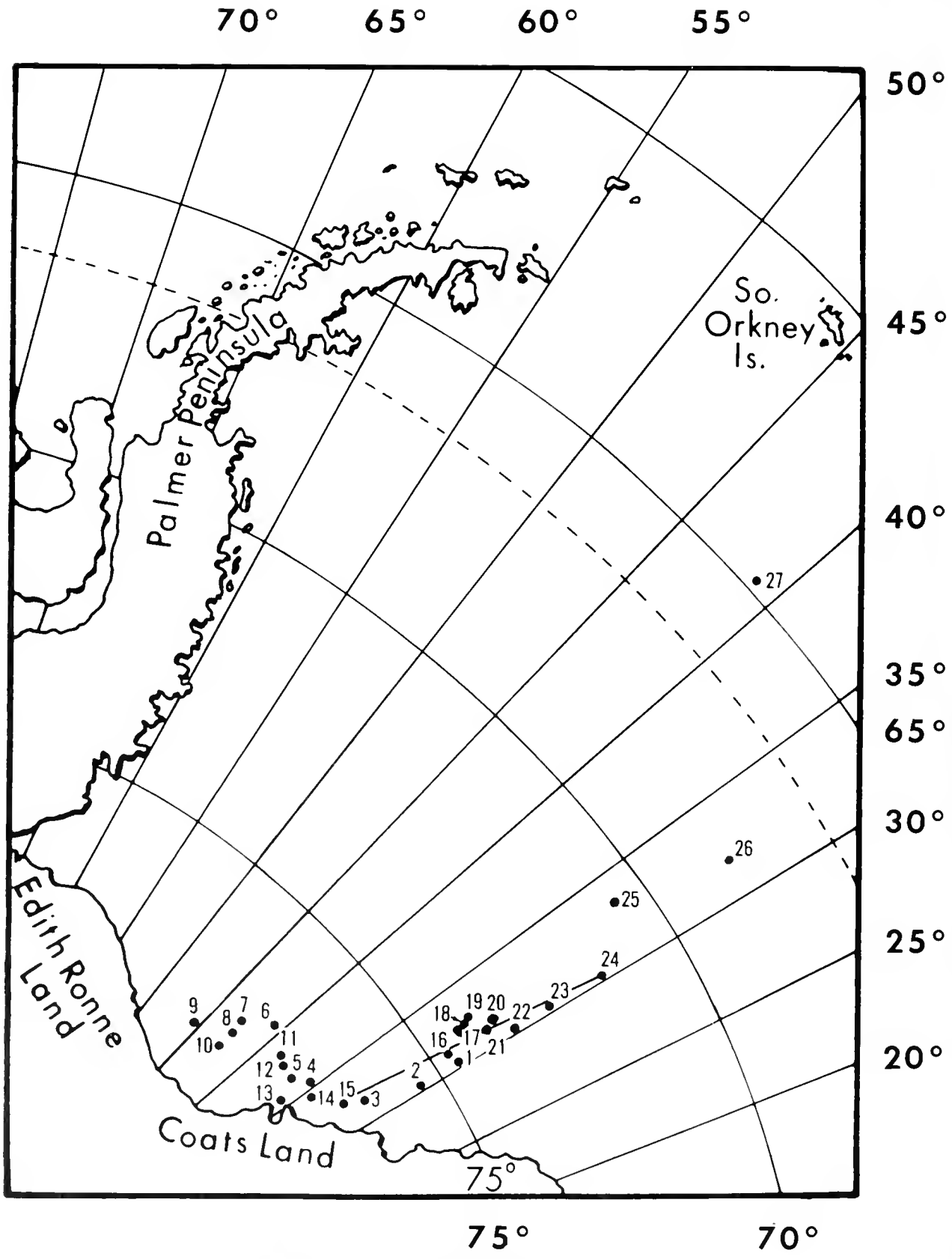

Figure 1. IWOSE '69 hydrographic station locations.

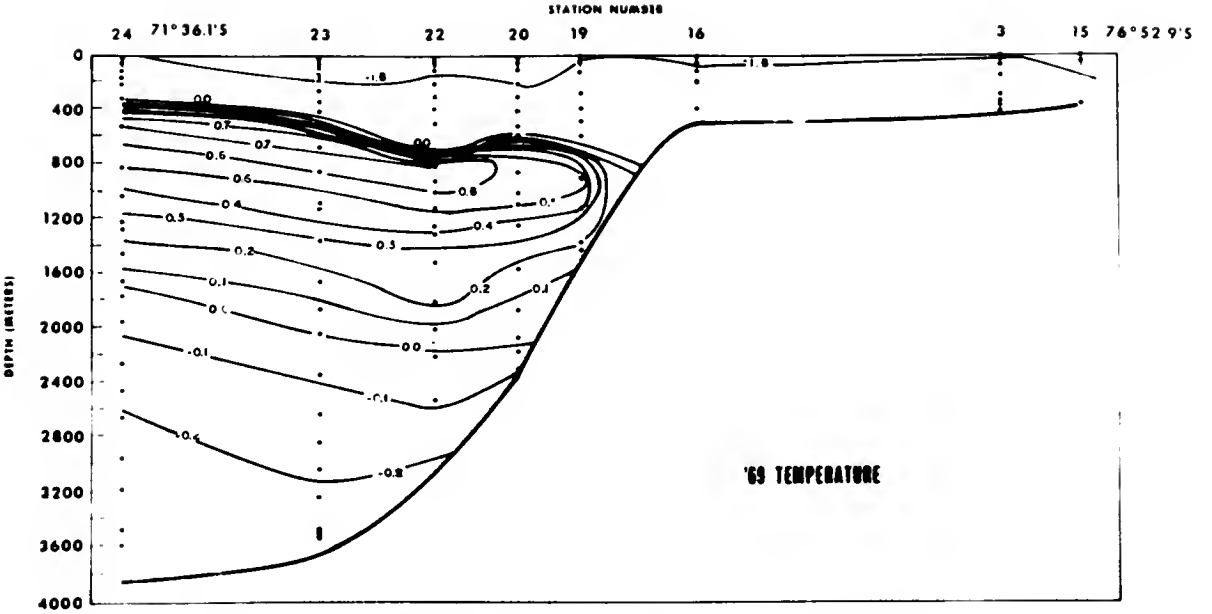

Figure 2. Vertical distribution of temperature (°C) during IWSOE '69.

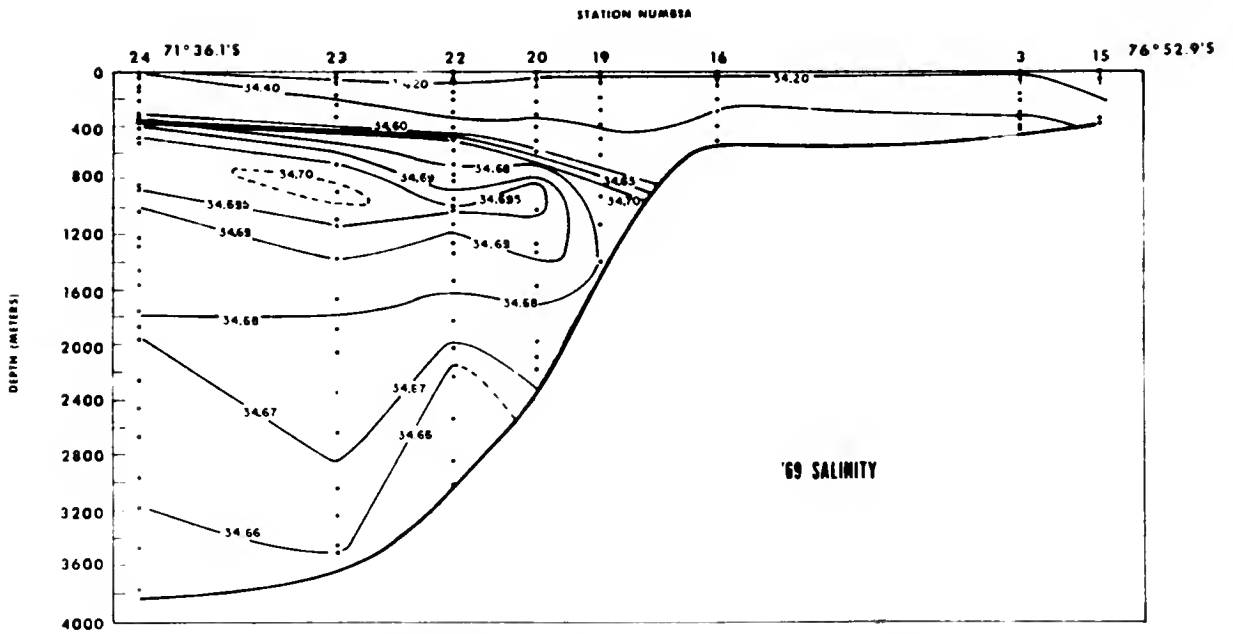

Figure 3. Vertical distribution of salinity (%) during IWSOE '69.

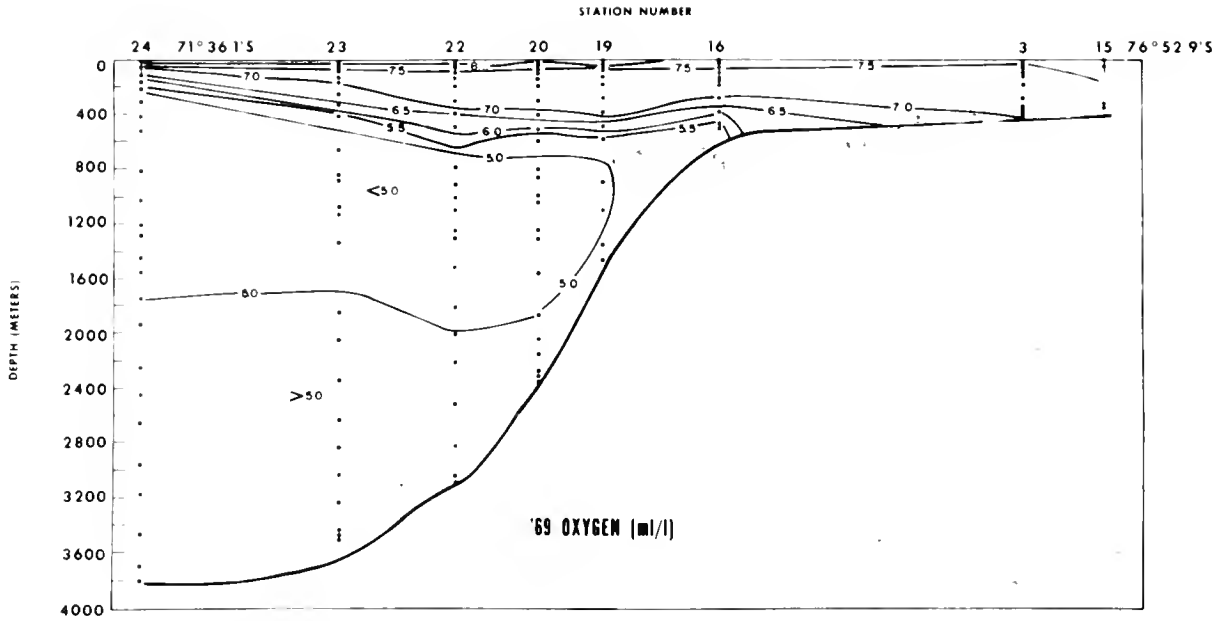

Figure 4. Vertical distribution of dissolved oxygen (ml/L) during IWSOE '69.

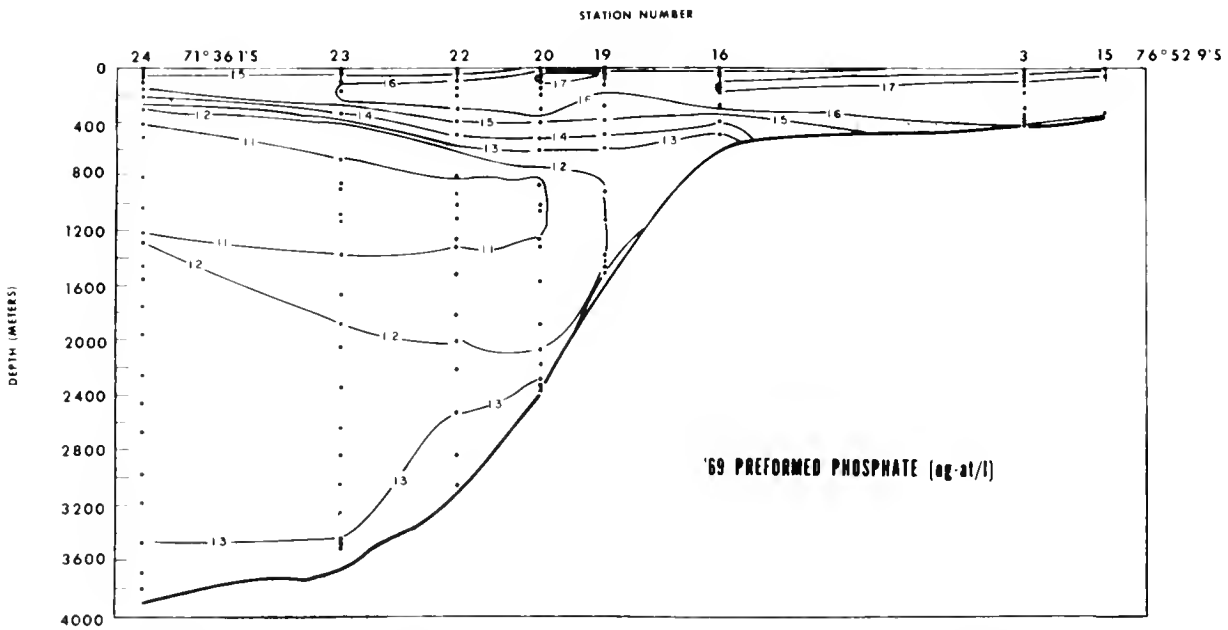

Figure 5. Vertical distribution of performed phosphate (μg-at/L) during IWSOE '69.

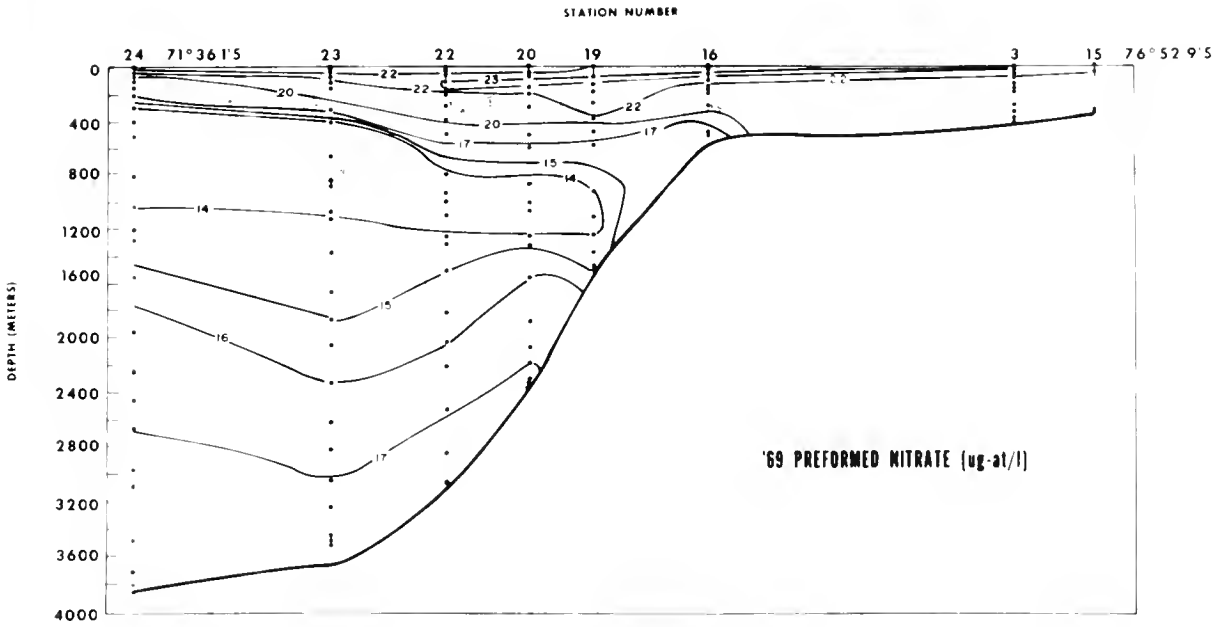

Figure 6. Vertical distribution of performed nitrate (μg-at/L) during IWSOE '69.

Table III. Table of Oceanographic Data (IWSOE '69).

EXPLANATION OF OCEANOGRAPHIC STATION DATA

A. Description of Entries, Units and Codes on NODC Station Listing

1. Surface Observations

Entry	*Description of Field*
NODC REF. ID. NO.	NODC reference identity number.
COUNTRY CODE	Indicates nationality of the institute or agency conducting the survey or expedition.
CRUISE NUMBER	A reference number assigned by NODC for storage-retrieval purposes. NODC Publication C–1, *Reference Sources of Oceanographic Station Data*, gives complete bibliographic and other pertinent information for each cruise.
SHIP CODE	Alphabetic representation of ship's name (or ICES numeric ship code).
LATITUDE	Degrees, minutes, and tenths of minutes, N or S.
LONGITUDE	Degrees, minutes, and tenths of minutes, E or W.
DRIFT INDICATOR	The letter D appears in this column if extensive drift occurred while on station.
MARSDEN SQUARE	
10°	Marsden square number according to the Marsden square system.
1°	The one-degree square number according to the Marsden square system.
STATION TIME	
(GMT)	Date and time given by the originator (GMT).
MONTH	Month (GMT).
DAY	Day (GMT).
HR. 1–10	GMT to nearest tenth of an hour.
YEAR	Year.
ORIGINATOR's CRUISE NUMBER	Alphabetic or alpha-numeric designator as assigned by the originator. If the year of the cruise forms part of the cruise numbering system, the year digits are found in preceding field.
STATION NUMBER	Originator's station number or designator.
DEPTH OF BOTTOM	Corrected or uncorrected sounding depth in meters.
MAX. DEPTH OF SAMPLES	Depth of deepest sample in hundreds of meters to nearest hundred-meter interval.
WAVE OBSERVATIONS	
DIR.	Direction from which the dominant waves are coming, in tens of degrees, according to WMO Code 0885.
HGT.	Height of dominant waves according to WMO Code 1555.
PER.	Period of dominant waves according to WMO Code 3155.
SEA AMT.	Sea amount (sea state) according to WMO Code 3700 (preceded by the letter A).
WEATHER CODE	If preceded by the letter X, weather according to WMO Code 4501. A numeric two-digit entry indicates weather according to WMO Code 4677.
*INSTR./CLOUD	This field is used either for recording instrument code when electronically obtained data are being reported, or for reporting cloud type and cloud amount when conventional Nansen cast data are being reported.
*INSTR.	A two character code representing instrument package of system.
TYPE	Cloud type according to WMO Code 0500.
AMT.	Cloud amount according to WMO Code 2700.
NODC STATION NUMBER	Assigned by NODC for data storage and retrieval purposes. The NODC Reference Identity and Station numbers combined, uniquely define each station in the NODC archives.

*DT/S^{U}/D	This indicator specifies that the reported data have been obtained electronically rather than by Nansen-type casts. U (up) and D (down) are cast indicators for electronically obtained serial data and specify that the data were taken while hoisting or lowering respectively.
WATER COLOR	Water color according to Forel-Ule Code.
TRANS. (m)	Water transparency in meters as determined by Secchi disc.
WIND	
DIR.	Direction from which wind is blowing in tens of degrees, according to WMO Code 0877.
SPEED OR FORCE	If preceded by letter S, wind speed in knots; if preceded by letter F, wind force in Beaufort code.
BAROMETER (mbs)	Barometric pressure in millibars; tens, units, and tenths places only.
AIR TEMPERATURE °C.	
DRY BUL	Dry bulb air temperature in degrees centigrade, to tenths.
WET BULB	Wet bulb air temperature in degrees centigrade, to tenths.
VIS CODE	Visibility according to WMO Code 4300.
NUMBER OBS, LEVEL	The number of observed levels associated with the station.
SPECIAL OBSERVATIONS	Entries in this space vary with individual cruises or stations. Information concerning entries in this field can be requested from the NODC.

2. A complete description of the codes can be found in NODC publication M-2 (Rev. August 1964), "Processing Physical and Chemical Data from Oceanographic Stations."

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° '1/10	LONGITUDE ° '1/10	DUPL INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	74316S	030189W		555	40	02	24	115	1969		001	0515	05	24	1	8		X4	2	6		0001

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		22	S03	928	-071	-073	7	11	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0113	3398	2735	0007365	0000	14426	805							
130		OBS	0000	-0113	33976	2735			14426	805	124		012	222	057	783	
		STD	0010	-0114	3397	2734	0007403	0007	14428	808							
130		OBS	0010	-0114	33970	2734			14428	808	130		013	227	056	792	
		STD	0020	-0121	3398	2735	0007300	0015	14426	811							
130		OBS	0026	-0125	33986	2736			14425	812	123		014	230	055	792	
		STD	0030	-0128	3405	2741	0006736	0022	14425	810							
		STD	0050	-0147	3427	2760	0004982	0033	14423	799							
130		OBS	0052	-0149	34289	2761			14423	798	161		018	280	064	790	
		STD	0075	-0177	3436	2768	0004195	0045	14414	741							
130		OBS	0078	-0179	34361	2768			14414	735	180		026	283	068	788	
		STD	0100	-0185	3438	2770	0004006	0055	14415	731							
130		OBS	0104	-0186	34384	2770			14415	741Q	191		012	294	070	784	
		STD	0125	-0185	3438	2770	0003967	0065	14419	727							
		STD	0150	-0184	3438	2770	0003963	0075	14424	724							
130		OBS	0156		34382					723	180		014	316	069	784	
		STD	0200	-0181	3438	2770	0003932	0095	14433	721							
130		OBS	0208	-0181	34383	2770			14435	720	181		007	304	070	788	
		STD	0250	-0180	3439	2770	0003867	0114	14442	714							
		STD	0300	-0179	3440	2771	0003787	0133	14451	706							
130		OBS	0311	-0179	34396	2771			14453	704	176		027	321	072	788	
		STD	0400	-0102	3446	2774	0003548	0170	14505	643							
130		OBS	T0415	-0088	34479	2775			14514	611Q	219		044	311	085	781	
		STD	0500	0001	3460	2780	0003028	0203	14571	523							
130		OBS	T0512	0015	34626	2782			14580	505	000		016	346	101	780	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° '1/10	LONGITUDE ° '1/10	DUPL INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	75314S	030080W		555	50	02	25	056	1969		002	0421	04	00	0	X		X4	0	3		0002

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
0T	S0	00	S00	951	-078	-082	8	25	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0180	3418	2754	0005593	0000	14398								
065		OBS	0000	-0180	34183	2754			14398								
		STD	0010	-0178	3419	2754	0005576	0006	14400								
		OBS	0010	-0178	34185	2754			14400								
		STD	0020	-0177	3423	2757	0005242	0011	14403								
000		OBS	0020	-0177	34228	2757			14403								
		OBS	0025	-0174	34258	2759			14406								
		STD	0030	-0175	3427	2760	0004941	0016	14406								
		OBS	0030	-0175	34267	2760			14406								
		STD	0050	-0175	3429	2762	0004768	0026	14410								
		OBS	0050	-0175	34288	2762			14410								
		STD	0075	-0176	3431	2764	0004604	0038	14414								
		OBS	0075	-0176	34307	2764			14414								
		STD	0100	-0175	3432	2764	0004500	0049	14419								
		OBS	0100	-0175	34319	2764			14419								
		STD	0125	-0177	3433	2765	0004418	0060	14422								
		OBS	0125	-0177	34327	2765			14422								
		OBS	0136	-0177	34330	2765			14424								
		STD	0150	-0175	3434	2766	0004332	0071	14427								
		OBS	0150	-0175	34337	2766			14427								
		STD	0200	-0174	3436	2767	0004160	0092	14436								
		OBS	0200	-0174	34356	2767			14436								
		OBS	0220	-0170	34362	2768			14442								
		STD	0250	-0169	3439	2770	0003880	0112	14447								
		OBS	0250	-0169	34391	2770			14447								
		OBS	0260	-0170	34396	2771			14449								
		STD	0300	-0128	3445	2774	0003537	0131	14476								
		OBS	0300	-0128	34452	2774			14476								
		OBS	0312	-0136	34440	2773			14474								
		OBS	0328	-0100	34462	2774			14494								
		OBS	0350	-0140	34520	2780			14479								
		OBS	0369	-0087	34519	2778			14507								
		OBS	0372	-0088	34560	2781			14508								
		OBS	0376	-0075	3448P	2774P											
		OBS	0384	-0107	3460P	2785P											
		OBS	0392	-0067	34553	2780			14521								
		STD	0400	-0098	3454	2780	0002967	0163	14508								
		OBS	0400	-0098	34539	2780			14508								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085		GL	75314S	030080W		555	50	02	25	085	1969		002	0421	03	00	0	X		X4	0	3		0003

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	S0	00	S00	951	-145	-147	1	20	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0196	3394	2734	0007426	0000	14387								
080		OBS	0000	-0196	33940	2734			14387								
		OBS	0008	-0179	34185	2754			14400								
		STD	0010	-0179	3425	2759	0005074	0006	14401								
000		OBS	0010	-0179	34250	2759			14401								
		STD	0020	-0180	3431	2764	0004605	0011	14403								
		OBS	0020	-0180	34310	2764			14403								
		OBS	0025	-0180	34303	2763			14404								
		STD	0030	-0180	3430	2763	0004691	0016	14404								
		OBS	0030	-0180	34298	2763			14404								
		STD	0050	-0175	3430	2763	0004676	0025	14410								
		OBS	0050	-0175	34300	2763			14410								
		STD	0075	-0170	3431	2764	0004582	0037	14417								
		OBS	0075	-0170	34312	2764			14417								
		STD	0100	-0170	3432	2765	0004491	0048	14421								
		OBS	0100	-0170	34322	2765			14421								
		STD	0125	-0173	3433	2765	0004406	0059	14424								
		OBS	0125	-0173	34330	2765			14424								
		STD	0150	-0169	3434	2766	0004334	0070	14430								
		OBS	0150	-0169	34339	2766			14430								
		STD	0200	-0162	3436	2767	0004167	0091	14442								
		OBS	0200	-0162	34360	2767			14442								
		STD	0250	-0155	3438	2769	0003995	0112	14454								
		OBS	0250	-0155	34382	2769			14454								
		OBS	0264	-0148	34402	2770			14460								
		OBS	0277	-0102	34440	2772			14484								
		STD	0300	-0088	3445	2773	0003699	0131	14495								
		OBS	0300	-0088	34453	2773			14495								
		OBS	0306	-0105	3439P	2768P											
		OBS	0319	-0066P	34430	2770P											
		OBS	0332	-0073	34460	2772			14507								
		OBS	0335	-0098	34450	2773			14496								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085		GL	75317S	030089W		555	50	02	25	115	1969		002	0421	04	00	0	X		X4	7	6		0004

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		00	S00	951	-117	-118	2	10	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0180	3423	2757	0005255	0000	14398	764							
109		OBS	0000	-0180	34227	2757			14398	764	196		016	273	065	752	
		STD	0010	-0180	3423	2758	0005210	0005	14400	769							
109		OBS	0010	-0180	34232	2758			14400	769	198		007	273	065	781	
		STD	0020	-0180	3424	2758	0005142	0010	14402	766							
109		OBS	0026	-0180	34251	2759			14403	764	195		008	280	066	789	
		STD	0030	-0180	3427	2761	0004905	0015	14404	761							
		STD	0050	-0181	3432	2765	0004507	0025	14408	748							
109		OBS	0052	-0181	34322	2765			14408	747	204		008	288	067	785	
		STD	0075	-0179	3433	2765	0004419	0036	14413	764							
109		OBS	0079	-0179	34336	2766			14413	765	204		009	296	062	785	
		STD	0100	-0181	3434	2766	0004322	0047	14416	753							
109		OBS	0105	-0182	34342	2767			14416	751	212		003	292	069	788	
		STD	0125	-0181	3435	2767	0004230	0058	14420	748							
		STD	0150	-0180	3435	2767	0004218	0068	14425	744							
109		OBS	0157	-0180	34353	2767			14426	742	199		050	310	069	788	
		STD	0200	-0179	3436	2768	0004115	0089	14434	728							
109		OBS	T0209	-0178	34365	2768			14436	725	180		005	293	070	789	
		STD	0250	-0164	3438	2769	0003980	0109	14450	710							
		STD	0300	-0138	3442	2772	0003742	0129	14471	680							
109		OBS	T0307	-0134	34429	2772			14474	675	210		006	306	078	785	
109		OBS	T0390	-0066	34530	2778			14521	592	206		008	321	089	783	

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUPE INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR,1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	76281S	031484W		555	61	02	26	055	1969		003	0436	04	00	0	X		X2	7	8		0005

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		00	S00	928	-051	-056	8	12	

MESSENGR TIME OF CAST HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	D₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0172	3402	2740	0006879	0000	14399	794							
056		OBS	0000	-0172	34018	2740			14399	794	179		017	268	062	750	
		STD	0010	-0173	3403	2741	0006786	0007	14401	794							
056		OBS	0018	-0174	34038	2742			14402	794	176		009	263	063	781	
		STD	0020	-0175	3407	2744	0006460	0013	14402	788							
		STD	0030	-0179	3420	2755	0005446	0019	14403	762							
056		OBS	0043	-0182	34306	2764			14406	739	205		005	289	065	781	
		STD	0050	-0182	3431	2764	0004581	0029	14407	735							
056		OBS	0068	-0183	34316	2764			14409	732	201		010	269	066	782	
		STD	0075	-0183	3432	2765	0004510	0041	14411	735							
056		OBS	0094	-0183	34318	2765			14414	743	204		001	291	066	782	
		STD	0100	-0183	3432	2765	0004471	0052	14415	743							
		STD	0125	-0182	3432	2765	0004457	0063	14419	741							
056		OBS	0144	-0182	34329	2765			14423	742Q	202		000	295	068	782	
		STD	0150	-0182	3433	2766	0004366	0074	14424	739							
056		OBS	0195	-0183	34344	2767			14431	735	197		025	314	070	780	
		STD	0200	-0183	3435	2767	0004180	0096	14432	735							
		STD	0250	-0181	3437	2769	0004001	0116	14441	732							
056		OBS	T0295	-0180	34384	2770			14450	726	201		008	280	071	780	
		STD	0300	-0181	3439	2770	0003820	0136	14450	724							
056		OBS	0345	-0183	34406	2772			14457	716	208		000	300	071	782	
056		OBS	0370	-0179	34424	2773			14463	719	207		002	300	072	781	
056		OBS	T0395	-0187	34438	2774			14464	726	213		000	270	071	781	
		STD	0400	-0188	3445	2775	0003279	0171	14464	725							
056		OBS	0429	-0191	34514	2781			14469	703	211		000	303	076	782	

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUPE INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR,1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	77054S	035026W		555	75	02	26	205	1969		004	0805	08	00	0	X		X7	5	7		0006

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		00	S00	915	-050	-054	8	13	

MESSENGR TIME OF CAST HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	D₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0183	3426	2760	0004964	0000	14397	763							
195		OBS	0000	-0183	34264	2760			14397	763	180		009	280	067	731	
		STD	0010	-0183	3427	2760	0004935	0005	14399	765							
		STD	0020	-0182	3427	2761	0004914	0010	14401	768							
		STD	0030	-0182	3427	2761	0004886	0015	14403	770							
195		OBS	0031	-0182	34272	2761			14403	770	185		006	282	067	769	
		STD	0050	-0183	3430	2763	0004656	0024	14406	743							
195		OBS	0056	-0183	34309	2764			14407	740	193		002	294	068	779	
		STD	0075	-0182	3433	2766	0004412	0036	14411	754							
195		OBS	T0082	-0182	34331	2766			14412	757	206		004	292	069	782	
		STD	0100	-0182	3435	2767	0004244	0046	14416	745							
		STD	0125	-0182	3436	2768	0004152	0057	14420	733							
195		OBS	0133	-0182	34369	2769			14421	730	201		002	296	070	783	
		STD	0150	-0182	3438	2770	0003983	0067	14424	729							
195		OBS	0183	-0183	34392	2771			14430	728	208			299	070	781	
		STD	0200	-0183	3440	2771	0003797	0087	14433	728							
		STD	0250	-0185	3444	2775	0003455	0105	14441	726							
195		OBS	0284	-0186	34466	2777			14445	724	208		000	299	071	781	
		STD	0300	-0187	3449	2779	0003037	0121	14449	722							
195		OBS	T0384	-0191	34580	2786			14462	717	192		000	295	069	782	
		STD	0400	-0191	3459	2787	0002201	0147	14465	718							
195		OBS	T0484	-0192	34610	2789			14479	721	197		000	297	068	784	
		STD	0500	-0193	3461	2789	0001960	0168	14481	721							
195		OBS	T0587	-0197	34629	2790			14494	719	200		000	295	069	782	
		STD	0600	-0197	3463	2790	0001756	0187	14496	718							
195		OBS	0687		34660					712	212		001	302	071	782	
		STD	0700	-0198	3467	2794	0001391	0202	14513	711							
195		OBS	0765	-0198	34713	2797			14524	707	212		000	297	073	782	
		STD	0800	-0195	3472	2798	0000959	0214	14532	707							
195		OBS	T0800	-0195	34721	2798			14532	707	209		002	296	071	788	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT WIDTH	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	77197S	036413W		555	76	02	27	115	1969		005	1085	11	00	0	X		X7	5	8		0007

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		06	S05	926	-059	-061	5	16	

MESSENGR TIME OF CAST HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-X10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0181	3428	2761	0004853	0000	14399	839							
138		OBS	0000	-0181	34279	2761			14399	839	169		021	262	070	764	
		STD	0010	-0182	3428	2761	0004838	0005	14400	845							
138		OBS	0019	-0182	34282	2762			14401	836Q	170		007	252	068	792	
		STD	0020	-0182	3428	2762	0004815	0010	14402	852							
138		OBS	0024	-0182	34280	2761			14402	854	163		006	248	064	795	
		STD	0030	-0182	3430	2763	0004670	0014	14403	814							
		STD	0050	-0183	3436	2768	0004195	0023	14407	727							
138		OBS	0051	-0183	34365	2768			14407	725	210		007	287	069	788	
		STD	0075	-0184	3440	2771	0003869	0033	14411	725							
138		OBS	0076		34403					725	202		006	297	068	787	
		STD	0100	-0186	3442	2773	0003697	0043	14415	733							
138		OBS	0103	-0186	34424	2773			14415	734	209		005	293	069	784	
		STD	0125	-0187	3444	2775	0003524	0052	14419	727							
		STD	0150	-0189	3446	2776	0003352	0060	14422	723							
138		OBS	0155	-0189	34464	2777			14423	722	219		002	300	069	785	
		STD	0200	-0195	3450	2780	0002998	0076	14428	723							
138		OBS	T0208	-0196	34502	2780			14429	723	204		001	298	068	788	
		STD	0250	-0195	3453	2782	0002738	0091	14437	720							
		STD	0300	-0193	3456	2784	0002482	0104	14447	716							
138		OBS	0311	-0193	34561	2785			14449	715	192		000	293	068	788	
		STD	0400	-0190	3459	2787	0002203	0127	14465	721							
138		OBS	T0412	-0190	34591	2787			14467	722	198		000	295	068	788	
		STD	0500	-0191	3461	2788	0001991	0148	14482	719							
138		OBS	T0511	-0191	34616	2789			14484	719	205		000	295	067	788	
138		OBS	0583	-0194	34620	2789			14494	725	204		001	293	067	788	
		STD	0600	-0196	3462	2790	0001821	0167	14496	725							
		STD	0700	-0206	3464	2791	0001614	0184	14509	724							
138		OBS	T0758	-0208	34644	2792			14517	720	207		003	299	069	784	
		STD	0800	-0207	3465	2792	0001444	0200	14525	714							
138		OBS	T0883	-0204	34670	2794			14541	706	199		000	294	071	786	
		STD	0900	-0202	3468	2794	0001216	0213	14545	706							
138		OBS	T0989	-0194	34702	2796			14564	706	202		001	298	070	788	
		STD	1000	-0193	3471	2797	0000940	0224	14566	705							
138		OBS	T1083	-0191	34743	2799			14582	697	198		002	299	072	789	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	NO.		° 1/10	° '1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085	GL	77197S	036413W			555	76	02	27	115	1969		005	1085	11	00	0	X		X7	0	3		0008

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	06	S05	926	-059	-061	6	23	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	t °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-X10⁷	Σ Δ D DYN. M. X 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0173	3423	2757	0005248	0000	14402								
115		OBS	0000	-0173	34230	2757			14402								
		STD	0010	-0174	3424	2758	0005163	0005	14403								
		OBS	0010	-0174	34240	2758			14403								
		STD	0020	-0174	3425	2759	0005103	0010	14405								
001		OBS	0020	-0174	34247	2759			14405								
		OBS	0025	-0175	34262	2760			14405								
		STD	0030	-0175	3429	2762	0004780	0015	14407								
		OBS	0030	-0175	34288	2762			14407								
		STD	0050	-0177	3437	2769	0004133	0024	14410								
		OBS	0050	-0177	34370	2769			14410								
		STD	0075	-0178	3440	2771	0003886	0034	14414								
		OBS	0075	-0178	34400	2771			14414								
		STD	0100	-0180	3442	2773	0003728	0044	14418								
		OBS	0100	-0180	34418	2773			14418								
		STD	0125	-0182	3444	2774	0003539	0053	14421								
		OBS	0125	-0182	34440	2774			14421								
		STD	0150	-0183	3446	2776	0003368	0061	14425								
		OBS	0150	-0183	34460	2776			14425								
		STD	0200	-0185	3450	2779	0003026	0077	14433								
		OBS	0200	-0185	34500	2779			14433								
		STD	0250	-0186	3453	2782	0002779	0092	14441								
		OBS	0250	-0186	34528	2782			14441								
		STD	0300	-0188	3456	2784	0002537	0105	14449								
		OBS	0300	-0188	34555	2784			14449								
		STD	0400	-0188	3458	2786	0002288	0129	14466								
		OBS	0400	-0188	34580	2786			14466								
		STD	0500	-0185	3460	2788	0002058	0151	14485								
		OBS	0500	-0185	34604	2788			14485								
		STD	0600	-0185	3462	2789	0001918	0171	14501								
		OBS	0600	-0185	34615	2789			14501								
		STD	0700	-0196	3463	2790	0001686	0189	14513								
		OBS	0700	-0196	34632	2790			14513								
		OBS	0744	-0201	34640	2791			14518								
		STD	0800	-0200	3465	2792	0001459	0205	14528								
		OBS	0800	-0200	34652	2792			14528								
		OBS	0888	-0193	34680	2794			14547								
		STD	0900	-0196	3468	2795	0001177	0218	14548								
		OBS	0900	-0196	34684	2795			14548								
		STD	1000	-0186	3472	2797	0000901	0228	14570								
		OBS	1000	-0186	34720	2797			14570								
		OBS	1080	-0180	34750	2800			14586								

REFERENCE CRAFT CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DUPLICATE INDICATOR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT.		NODC STATION NUMBER
	318085	GL	76502S	040554W		556	60	03	01	025	1969		006	0515	05	00	0	X		X1	7	1		0009

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbar)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		15	S16	947	-149	-153	8	11	

MESSENGR. TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	-0177	3439	2771	0003979	0000	14402	828							
031		OBS	0000	-0177	34394	2771			14402	828	185		011	255	060	770	
		STD	0010	-0180	3438	2769	0004089	0004	14402	814							
031		OBS	0013	-0181	34373	2769			14402	813	191		008	264	061	780	
		STD	0020	-0183	3439	2770	0003983	0008	14403	816							
031		OBS	0023	-0184	34392	2771			14403	817	189		007	264	061	783	
		STD	0030	-0183	3440	2771	0003931	0012	14404	817							
031		OBS	0048	-0181	34406	2772			14408	800	194		008	258	062	782	
		STD	0050	-0182	3441	2772	0003814	0020	14408	792							
031		OBS	0074		34469					729	221		005	268	064	778	
		STD	0075	-0187	3447	2777	0003326	0029	14411	729							
		STD	0100	-0190	3452	2781	0002942	0037	14414	731							
031		OBS	0100	-0190	34517	2781			14414	731	212		003	294	063	778	
		STD	0125	-0190	3454	2783	0002766	0044	14419	725							
		STD	0150	-0190	3456	2784	0002590	0050	14423	719							
031		OBS	T0151	-0190	34560	2784			14423	719	217		001	297	066	779	
		STD	0200	-0193	3459	2787	0002315	0063	14431	719							
031		OBS	T0204	-0193	34596	2787			14431	719	214		000	292	064	778	
		STD	0250	-0197						719							
		STD	0300	-0201						720							
031		OBS	0309	-0202						720	224		000	294	064	780	
		STD	0400	-0199						722							
031		OBS	T0412	-0198						722	230		000	296	064	779	
		STD	0500	-0194						715							
031		OBS	T0513	-0193						713	212		007	295	065	781	

REFERENCE CRAFT CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DUPLICATE INDICATOR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT.		NODC STATION NUMBER
	318085	GL	77160S	042383W		556	72	03	01	145	1969		007	0510	05	00	0	X		X4	5	7		0010

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbar)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		13	S30	937	-165	-167	6	11	

MESSENGR. TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	-0188						751							
157		OBS	0000	-0188	34630	2790				751	209		010	287	065	761	
		STD	0010	-0188						751							
157		OBS	0015	-0188	34437	2774			14400	751	218		008	286	064	779	
		STD	0020	-0188	3444	2775	0003588		14401	750							
		STD	0030	-0187	3444	2775	0003553		14403	747							
157		OBS	0030	-0187	34444	2775			14403	747	201		008	297	065	782	
		STD	0050	-0189	3447	2777	0003337		14406	737							
157		OBS	0055	-0189	34473	2777			14407	735	223		007	291	065	780	
		STD	0075	-0188	3449	2779	0003169		14411	731							
157		OBS	0080	-0188	34494	2779			14412	730	222		006	297	065	780	
		STD	0100	-0191	3454	2783	0002763		14414	723							
157		OBS	T0105	-0192	34544	2783			14415	722	215		001	300	065	780	
		STD	0125	-0192	3455	2784	0002670		14418	724							
		STD	0150	-0191	3456	2784	0002580		14423	726							
157		OBS	0156	-0191	34562	2785			14424	727	224		000	298	066	781	
		STD	0200	-0190	3457	2785	0002476		14432	718							
157		OBS	0207	-0190	34578	2786			14433	717	208		000	300	067	783	
		STD	0250	-0193	3463	2790	0001977		14439	719							
		STD	0300	-0197	3467	2794	0001630		14446	721							
157		OBS	T0309	-0198	34681	2794			14448	721	208		000	298	065	781	
		STD	0400	-0198	3470	2796	0001362		14463	719							
157		OBS	T0412	-0198	34680	2794				719	213		000	298	067	783	
		STD	0500	-0190	3471	2797	0001203		14484	718							
157		OBS	T0504	-0189	34715	2797			14485	718	217		001	294	066	782	

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT INDICA	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
318	085	GL	77385S	042278W		55	6	03	02	085	1969		008	0585	06	00	0	X		X7	5	7	0011

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		15	S19	931	-138	-140	5	12	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0189						815							
076		OBS	0000	-0189	3562Q	2870Q				815	199		008	289	065	753	
		STD	0010	-0189						746							
076		OBS	0010	-0189	3443Q	2774Q				746	169		010	288	064	779	
		STD	0020	-0188						746							
		STD	0030	-0187	3440	2772	0003860		14402	746							
076		OBS	0030	-0187	34404	2772			14402	746	203		010	283	063	782	
		STD	0050	-0189	3441	2772	0003804		14405	746							
076		OBS	0056	-0190	34410	2772			14405	746	208		009	286	065	785	
		STD	0075	-0188	3441	2772	0003768		14410	745							
076		OBS	0081	-0187	34413	2772			14411	744	209		009	288	064	785	
		STD	0100	-0187	3446	2776	0003386		14415	733							
		STD	0125	-0188	3451	2780	0002986		14419	723							
076		OBS	0132	-0188	34517	2781			14421	721	216		003	291	065	784	
		STD	0150	-0190	3454	2783	0002736		14423	719							
076		OBS	0182	-0192	34566	2785			14428	717	207		000	294	065	788	
		STD	0200	-0192	3457	2785	0002470		14431	719							
		STD	0250	-0193	3459	2787	0002285		14439	723							
076		OBS	0283	-0193	34598	2788			14444	724	205		000	293	064	789	
		STD	0300	-0197	3461	2789	0002089		14446	723							
076		OBS	T0383	-0211	34635	2791			14453	721	212		000	295	066	789	
		STD	0400	-0211	3464	2791	0001754		14456	721							
076		OBS	T0483	-0213	34649	2792			14469	722	213		000	299	068	784	
		STD	0500	-0214	3465	2792	0001605		14472	720							
076		OBS	T0546	-0215	34659	2793			14479	719	219		001	297	068	782	
076		OBS	T0574	-0203	34683	2795			14489	721	226		002	294	067	783	

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT INDICA	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
318	085	GL	775425	045133W		55	6	03	03	235	1969		009	0250	02	00	0	X		X7	5	8	0012

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		00	S00	973	-106	-111	5	09	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0188	3450	2779	0003154	0000	14398	730							
231		OBS	0000	-0188	34498	2779			14398	730	211		007	294	065	760	
		STD	0010	-0188	3449	2779	0003210	0003	14400	729							
231		OBS	0016	-0188	34487	2778			14401	729	221		007	295	065	780	
		STD	0020	-0188	3449	2778	0003226	0006	14401	732							
		STD	0030	-0189	3449	2778	0003218	0010	14403	737							
231		OBS	0031	-0189	34487	2778			14403	738	223		013	291	064	785	
		STD	0050	-0189	3448	2778	0003229	0016	14406	744							
231		OBS	0056	-0189	34483	2778			14407	746	222		007	292	067	782	
		STD	0075	-0191	3449	2779	0003162	0024	14409	734							
231		OBS	0081	-0192	34497	2779			14410	733	217		008	293	065	781	
		STD	0100	-0191	3450	2779	0003095	0032	14414	739							
231		OBS	0106	-0190	34497	2779			14415	740	213		008	295	065	784	
		STD	0125	-0190	3450	2780	0003057	0040	14418	739							
		STD	0150	-0190	3450	2780	0003042	0047	14422	738							
231		OBS	T0155	-0190	34501	2780			14423	737	222		007	294	064	788	
		STD	0200	-0193	3450	2780	0002974	0062	14430	729							
231		OBS	T0207	-0193	34505	2780			14430	728	207		005	292	063	789	
231		OBS	0247	-0195	34512	2781			14436	721	219		007	297	064	789	

REFERENCE CRUISE CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	QUARTER DEGREE SQUARE 10°	QUARTER DEGREE SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYP	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	77500S	042052W		556	72	03	04	145	1969		010	0680	07	00	0	X		X7	5	6		0013

WATER COLOR CODE	WATER TRANS. mi	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbar)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		16	S13	999	-169	-171	8	13	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	QUALITY CODE
		STD	0000	-0188	3442	2773	0003784	0000	14397	756							
144		OBS	0000	-0188	34416	2773			14397	756	200		010	278	062	776	
		STD	0010	-0190	3440	2771	0003919	0004	14398	765							
144		OBS	0010	-0190	34397	2771			14398	765	191		008	278	062	789	
		STD	0020	-0189	3439	2771	0003969	0008	14400	761							
144		OBS	0026	-0188	34383	2770			14401	760	199		009	277	061	791	
		STD	0030	-0188	3438	2770	0004019	0012	14402	761							
		STD	0050	-0187	3438	2770	0004017	0020	14406	766							
144		OBS	0051	-0187	34382	2770			14406	766	201		008	277	061	791	
		STD	0075	-0189	3440	2771	0003858	0030	14409	753							
144		OBS	0076	-0189	34404	2772			14409	752	204		009	292	061	789	
		STD	0100	-0188	3444	2775	0003538	0039	14414	736							
144		OBS	0102	-0188	34442	2775			14415		210		007	295	062	789	
		STD	0125	-0189	3448	2778	0003213	0047	14418	724							
		STD	0150	-0190	3451	2780	0003004	0055	14422	716							
144		OBS	T0150	-0190	34505	2780			14422	716	206		002	298	064	789	
		STD	0200	-0191	3453	2782	0002779	0070	14431	714							
144		OBS	0205	-0191	34537	2783			14432	714	210		000	297	063	789	
		STD	0250	-0191	3456	2784	0002518	0083	14439	714							
		STD	0300	-0192	3458	2786	0002334	0095	14448	714							
144		OBS	T0308	-0192	34585	2786			14449	714	206		001	295	062	789	
		STD	0400	-0189	3462	2789	0001981	0117	14466	711							
144		OBS	0413	-0188	34625	2790			14469	711	210		000	284	064	789	
		STD	0500	-0225	3464	2791	0001666	0135	14466	711							
144		OBS	T0517	-0229	34639	2792			14467	711	212		002	283	067	774	
		STD	0600	-0226	3464	2791	0001588	0151	14482	711							
144		OBS	0620	-0225	34638	2791			14486	711	216		000	282	068	776	
144		OBS	T0671	-0227	34647	2792			14494	709	212		001	288	067	790	

REFERENCE CRUISE CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	QUARTER DEGREE SQUARE 10°	QUARTER DEGREE SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYP	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	77102S	038408W		555	78	03	05	205	1969		011	0645	08	00	0	X		X7	5	8		0014

WATER COLOR CODE	WATER TRANS. mi	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbar)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		01	S08	921	-118	-122	5	15	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	QUALITY CODE
		STD	0000	-0185	3431	2764	0004590	0000	14397	796							
199		OBS	0000	-0185	34312	2764			14397	796	175		007	249	059	793	
		STD	0010	-0186	3430	2763	0004704	0005	14398	793							
199		OBS	0010	-0186	34296	2763			14398	793	173		007	248	059	792	
		STD	0020	-0186	3431	2764	0004591	0009	14400	793							
199		OBS	0025	-0186	34314	2764			14401	792	181		006	236	061	775	
		STD	0030	-0186	3433	2765	0004470	0014	14402	790							
		STD	0050	-0184	3437	2769	0004139	0022	14407	781							
199		OBS	0051	-0184	34369	2769			14407	780	188		007	272	061	789	
		STD	0075	-0188	3438	2770	0004014	0033	14409	780							
199		OBS	0076	-0188	34380	2770			14409	779	193		007	278	062	790	
		STD	0100	-0189	3446	2776	0003390	0042	14414	738							
199		OBS	T0100	-0189	34459	2776			14414	738	203		011	293	064	786	
		STD	0125	-0189	3450	2780	0003060	0050	14419	726							
		STD	0150	-0189	3453	2782	0002815	0057	14423	717							
199		OBS	0153	-0189	34535	2782			14424	716	201		001	296	059	789	
		STD	0200	-0191	3454	2783	0002703	0071	14431	706							
199		OBS	T0204	-0191	34545	2783			14432	705	205		000	299	065	782	
		STD	0250	-0191	3456	2784	0002520	0084	14439	711							
		STD	0300	-0191	3458	2786	0002367	0096	14448	717							
199		OBS	0307	-0191	34578	2786			14449	718	199		000	294	065	787	
		STD	0400	-0190	3459	2787	0002204	0119	14465	718							
199		OBS	T0410	-0190	34593	2787			14467	718	196		000	292	064	786	
		STD	0500	-0191	3462	2789	0001915	0140	14482	721							
199		OBS	T0511	-0191	34621	2789			14484	721	205		000	292	065	789	
		STD	0600	-0199	3463	2790	0001748	0158	14495	718							
199		OBS	0614	-0200	34633	2791			14497	717	207		000	296	066	786	
		STD	0700	-0201	3466	2793	0001453	0174	14511	714							
199		OBS	T0714	-0201	34666	2793			14514	714	208		000	278	064	784	
		STD	0800	-0198	3468	2794	0001257	0188	14530	713							
199		OBS	0820	-0197	34689	2795			14534	713	204		000	302	067	784	
199		OBS	T0839	-0199	34696	2796			14536	709	205		000	294	068	789	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085		GL	771895	037423W		555	77	03	06	205	1969		012	1024	10	00	0	X		X4	5	8		0015

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		18	S13	869	-157	-159	8	14	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ O OYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0187	3440	2771	0003902	0000	14398	780							
194		OBS	0000	-0187	34401	2771			14398	780	184		007	267	063	779	
		STD	0010	-0186	3434	2767	0004336	0004	14399	792							
194		OBS	0010	-0186	34344	2767			14399	792	183		006	266	063	789	
		STD	0020	-0185	3434	2767	0004347	0008	14401	785							
194		OBS	0020	-0185	34342	2767			14401	785	186		007	268	063	790	
		STD	0030	-0191	3434	2767	0004343	0013	14400	765							
194		OBS	0031	-0191	34338	2766			14400	764	191		007	269	063	790	
		STD	0050	-0185	3434	2766	0004351	0022	14406	786							
194		OBS	T0056	-0184	34339	2766			14407	789	194		007	274	062	790	
		STD	0075	-0190	3442	2773	0003702	0032	14409	755							
		STD	0100	-0195	3450	2780	0003060	0040	14412	727							
194		OBS	0110	-0196	34525	2782			14413	720	210		002	295	066	788	
		STD	0125	-0196	3453	2782	0002812	0047	14416	724							
		STD	0150	-0196	3455	2784	0002643	0054	14420	729							
194		OBS	T0163	-0196	34553	2784			14422	731	202		001	293	066	771	
		STD	0200	-0194	3457	2785	0002464	0067	14430	729							
		STD	0250	-0192	3458	2786	0002364	0079	14439	727							
194		OBS	0268	-0191	34586	2787			14443	726	209		001	293	066	785	
		STD	0300	-0191	3459	2787	0002260	0091	14448	723							
194		OBS	T0374	-0192	34599	2788			14460	720	204		001	293	065	788	
		STD	0400	-0195	3460	2788	0002111	0112	14463	722							
194		OBS	0478	-0199	34612	2789			14474	724	205		001	291	064	787	
		STD	0500	-0196	3462	2789	0001934	0133	14479	723							
194		OBS	0582	-0191	34625	2790			14496	718	212		000	292	065	786	
		STD	0600	-0194	3463	2790	0001768	0151	14497	718							
		STD	0700	-0205	3463	2790	0001664	0168	14509	716							
194		OBS	T0780	-0210	34644	2792			14520	714	215		001	295	068	786	
		STD	0800	-0210	3465	2792	0001439	0184	14524	714							
		STD	0900	-0208	3468	2794	0001189	0197	14542	711							
194		OBS	T0996	-0206	34700	2796			14559	709	213		001	299	070	789	
		STD	1000	-0206	3471	2797	0000874	0207	14560	710							
194		OBS	T1016	-0207	34760	2801			14563	716	209		000	301	072	790	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085		GL	775025	035329W		555	75	03	07	085	1969		013	0347	03	00	0	X		X1	7	2		0016

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		18	S10	791	-208	-211	8	11	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ O OYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0187	3457	2785	0002588	0000	14400	738							
075		OBS	0000	-0187	34572	2785			14400	738	208		009	289	067	780	
075		OBS	0006	-0186	34420	2773			14399	736	205		006	288	066	791	
		STD	0010	-0185	3440	2771	0003908	0003	14400	745							
075		OBS	0014	-0184	34386	2770			14401	751	209		007	287	066	795	
		STD	0020	-0185	3438	2770	0004055	0007	14401	749							
		STD	0030	-0186	3437	2769	0004124	0011	14403	745							
075		OBS	0040	-0187	34365	2768			14404	742	211		007	283	067	751	
		STD	0050	-0187	3437	2769	0004140	0020	14406	737							
075		OBS	0066	-0186	34367	2769			14408	735	214		005	290	067	793	
		STD	0075	-0186	3437	2769	0004127	0030	14410	739							
075		OBS	0092	-0185	34365	2768			14413	744	214		007	290	067	753	
		STD	0100	-0185	3437	2768	0004121	0040	14415	742							
		STD	0125	-0184	3437	2768	0004107	0051	14419	738							
075		OBS	T0143	-0184	34365	2768			14422	736	214		006	291	067	792	
		STD	0150	-0184	3436	2768	0004100	0061	14423	736							
075		OBS	0194	-0184	34360	2768			14431	736	209		006	288	066	795	
		STD	0200	-0184	3436	2768	0004100	0081	14431	736							
		STD	0250	-0185	3436	2768	0004053	0102	14440	733							
		STD	0300	-0185	3436	2768	0004005	0122	14448	731							
075		OBS	T0300	-0185	34364	2768			14448	731	208		005	288	066	794	
075		OBS	T0322	-0183	34360	2768			14452	738	213		006	289	067	781	
075		OBS	T0343	-0184	34377	2769			14456	724	217		010	291	067	792	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	77502S	035329W		555	75	03	07	085	1969		013	0347	03	00	0	X		X1	0	3		0017

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	18	S10	791	-208	-211	8	14	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	QUAL
		STD	0000	-0188	3427	2761	0004899	0000	14395								
065		08S	0000	-0188	34271	2761			14395								
		STD	0010	-0188	3428	2762	0004823	0005	14397								
		OBS	0010	-0188	34280	2762			14397								
		STD	0020	-0187	3429	2762	0004750	0010	14399								
000		08S	0020	-0187	34289	2762			14399								
		OBS	0025	-0187	34289	2762			14400								
		STD	0030	-0187	3429	2762	0004743	0014	14401								
		OBS	0030	-0187	34289	2762			14401								
		STD	0050	-0187	3429	2762	0004723	0024	14404								
		OBS	0050	-0187	34290	2762			14404								
		STD	0075	-0187	3429	2762	0004707	0036	14408								
		OBS	0075	-0187	34290	2762			14408								
		STD	0100	-0187	3429	2762	0004683	0047	14413								
		OBS	0100	-0187	34291	2762			14413								
		STD	0125	-0187	3429	2763	0004660	0059	14417								
		OBS	0125	-0187	34292	2763			14417								
		STD	0150	-0187	3429	2763	0004636	0071	14421								
		OBS	0150	-0187	34293	2763			14421								
		STD	0200	-0186	3429	2763	0004607	0094	14430								
		OBS	0200	-0186	34293	2763			14430								
		STD	0250	-0186	3430	2763	0004560	0117	14438								
		OBS	0250	-0186	34295	2763			14438								
		STD	0300	-0186	3430	2763	0004491	0139	14446								
		08S	0300	-0186	34300	2763			14446								
		08S	0320	-0186	34309	2764			14450								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	77220S	034292W		555	74	03	07	140	1969		014	0370	04	00	0	X		X7	7	8		0018

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		21	S04	754	-115	-116	7	10	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	QUAL
		STD	0000	-0183	3421	2756	0005363	0000	14397	772							
140		08S	0000	-0183	34212	2756			14397	772	190		012	267	061	788	
		STD	0010	-0183	3421	2756	0005357	0005	14398	774							
140		OBS	0010	-0183	34212	2756			14398	774	189		011	270	062	791	
		STD	0020	-0185	3425	2759	0005055	0011	14400	759							
		STD	0030	-0186	3428	2762	0004814	0016	14401	749							
140		OBS	0036	-0187	34286	2762			14402	746	213		011	284	065	758	
		STD	0050	-0186	3428	2762	0004770	0025	14404	753							
140		OBS	0061	-0186	34283	2762			14406	754	206		011	284	067	789	
		STD	0075	-0186	3429	2762	0004709	0037	14409	744							
140		OBS	0087	-0186	34299	2763			14411	738	206		011	288	066	790	
		STD	0100	-0186	3430	2763	0004610	0049	14413	739							
		STD	0125	-0185	3431	2764	0004557	0060	14418	741							
140		OBS	T0136	-0185	34308	2764			14420	742	211		010	287	066	790	
		STD	0150	-0185	3431	2764	0004526	0071	14422	740							
140		08S	T0191	-0186	34307	2764			14428	736	207		008	288	066	789	
		STD	0200	-0186	3431	2764	0004500	0094	14430	736							
		STD	0250	-0187	3431	2764	0004452	0116	14438	735							
140		OBS	0291	-0187	34310	2764			14445	732	209		009	291	066	790	
		STD	0300	-0185	3431	2764	0004387	0138	14447	731							
140		08S	T0339	-0183	34332	2766			14455	725	207		012	296	067	790	
140		08S	0366	-0187	34372	2769			14458	722	206		005	294	068	790	

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT BOTTLE	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS OBS.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	76529S	032497W		555	62	03	08	055	1969		015	0375	04	00	0	X		X7	X	9		0019

WATER COLOR CODE	WATER TRANS. (m)	WIND OBS.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		22	S18	733	-161	-162	4	05	

MESSENGE TIME AM/PM HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	QQS
		STD	0000	-0177	3399	2738	0007113	0000	14396	808							
063		OBS	0000	-0177	33986	2738			14396	808	165		017	236	054	799	
		STD	0010	-0176	3397	2737	0007201	0007	14398	811							
063		OBS	0010	-0176	33974	2737			14398	811	170		018	238	054	799	
		STD	0020	-0175	3403	2741	0006766	0014	14401	806							
		STD	0030	-0175	3408	2745	0006378	0021	14404	801							
		STD	0050	-0173	3418	2753	0005601	0033	14409	791							
063		OBS	T0051	-0173	34184	2753			14410	790	192		014	263	058	797	
063		OBS	0346	-0186	34377	2769			14455	731	219		003	290	069	790	
063		OBS	T0372	-0184	34389	2770			14461	727	220		004	293	069	789	

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT BOTTLE	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS OBS.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318085	GL	76529S	032497W		555	62	03	08	055	1969		015	0375	04	00	0	X		X7	0	3		0020

WATER COLOR CODE	WATER TRANS. (m)	WIND OBS.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	22	S18	733	-161	-162	4	15	

MESSENGE TIME AM/PM HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	QQS
		STD	0000	-0178	3393	2733	0007542	0000	14395								
050		OBS	0000	-0178	33930	2733			14395								
		STD	0010	-0178	3393	2733	0007535	0008	14397								
		OBS	0010	-0178	33930	2733			14397								
		STD	0020	-0181	3400	2739	0006983	0015	14398								
000		OBS	0020	-0181	34000	2739			14398								
		OBS	0025	-0180	34071	2744			14400								
		STD	0030	-0178	3410	2747	0006216	0021	14402								
		OBS	0030	-0178	34100	2747			14402								
		STD	0050	-0171	3422	2756	0005338	0033	14411								
		OBS	0050	-0171	34215	2756			14411								
		STD	0075	-0182	3427	2761	0004888	0046	14410								
		OBS	0075	-0182	34268	2761			14410								
		STD	0100	-0185	3428	2761	0004788	0058	14413								
		OBS	0100	-0185	34278	2761			14413								
		STD	0125	-0186	3429	2762	0004670	0070	14417								
		OBS	0125	-0186	34291	2762			14417								
		STD	0150	-0186	3430	2763	0004570	0081	14421								
		OBS	0150	-0186	34302	2763			14421								
		OBS	0176	-0183	34310	2764			14427								
		STD	0200	-0187	3432	2765	0004398	0104	14430								
		OBS	0200	-0187	34320	2765			14430								
		STD	0250	-0187	3433	2766	0004282	0125	14438								
		OBS	0250	-0187	34331	2766			14438								
		STD	0300	-0187	3434	2767	0004167	0146	14446								
		OBS	0300	-0187	34342	2767			14446								
		OBS	0352	-0187	34348	2767			14455								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DIFF INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	74400S	031041W		555	41	03	09	056	1969		016	0534	05	00	0	X		X1	6	3		0021

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		21	S11	886	-175	-181	8	12	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SUU
		STD	0000	-0170	3409	2746	0006339	0000	14401	795							
056		OBS	0000	-0170	34089	2746			14401	795	167		015	241	055	801	
		STD	0010	-0168	3408	2745	0006376	0006	14404	793							
056		OBS	0010	-0168	34084	2745			14404	793	173		014	243	054	798	
		STD	0020	-0168	3409	2745	0006361	0013	14405	794							
056		OBS	0025		34085					795	168		015	243	054	796	
		STD	0030	-0169	3412	2748	0006086	0019	14407	787							
		STD	0050	-0169	3422	2756	0005305	0030	14412	758							
056		OBS	0051	-0169	34223	2757			14412	757	193		012	285	060	792	
		STD	0075	-0175	3428	2761	0004798	0043	14414	743							
		STD	0100	-0182	3434	2767	0004299	0054	14416	728							
056		OBS	T0102	-0182	34348	2767			14416	727	206		008	293	065	790	
		STD	0125	-0182	3435	2767	0004230	0065	14420	734							
035		OBS	0146	-0181	34361	2768			14424	740	211		002		066	788	
		STD	0150	-0181	3436	2768	0004109	0075	14425	727							
056		OBS	0152	-0181	34366	2768			14425	722	200		000	296	067	786	
035		OBS	0194	-0178	34368	2769			14433	722	205		002	294	068	786	
		STD	0200	-0174	3437	2769	0004053	0096	14436	720							
		STD	0250	-0140	3438	2768	0004064	0116	14461	707							
035		OBS	0292		34405					695	203		000	295	076	786	
		STD	0300	-0108	3442	2771	0003863	0136	14485	683							
035		OBS	T0390	-0050	34540	2778			14528	573	220		001	308	089	780	
		STD	0400	-0019	3457	2779	0003143	0171	14545	540							
035		OBS	T0494	0014	34663	2785			14577	502	231		002	312	103	779	
		STD	0500	0000	3466	2785	0002568	0200	14571	516							
035		OBS	T0509	-0024	34645	2785			14562	542	229		002	309	099	780	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DIFF INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	74400S	031041W		555	41	03	09	030	1969		016	0534	05	00	0	X		X7	0	3		0022

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
OT	S0	21	S11	871	-182	-183		16	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SUU
		STD	0000	-0186	3402	2741	0006824	0000	14393								
030		OBS	0000	-0186	34021	2741			14393								
		OBS	0008	-0182	34062	2744			14396								
		STD	0010	-0184	3406	2744	0006492	0007	14396								
000		OBS	0010	-0184	34064	2744			14396								
		STD	0020	-0187	3421	2756	0005341	0013	14398								
		OBS	0020	-0187	34212	2756			14398								
		OBS	0025	-0186	34260	2760			14400								
		STD	0030	-0178	3428	2761	0004841	0018	14405								
		OBS	0030	-0178	34279	2761			14405								
		STD	0050	-0185	3432	2765	0004497	0027	14406								
		OBS	0050	-0185	34320	2765			14406								
		STD	0075	-0187	3434	2766	0004323	0038	14409								
		OBS	0075	-0187	34340	2766			14409								
		STD	0100	-0188	3435	2767	0004220	0049	14413								
		OBS	0100	-0188	34351	2767			14413								
		STD	0125	-0188	3436	2768	0004128	0059	14417								
		OBS	0125	-0188	34361	2768			14417								
		STD	0150	-0188	3437	2769	0004059	0069	14421								
		OBS	0150	-0188	34368	2769			14421								
		STD	0200	-0188	3438	2770	0003913	0089	14430								
		OBS	0200	-0188	34383	2770			14430								
		STD	0250	-0184	3440	2771	0003756	0108	14440								
		OBS	0250	-0184	34401	2771			14440								
		STD	0300	-0157	3446	2775	0003367	0126	14462								
		OBS	0300	-0157	34460	2775			14462								
		STD	0400	-0054	3461	2784	0002632	0156	14529								
		OBS	0400	-0054	34612	2784			14529								
		OBS	0488	-0013	34644	2785			14563								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	74187S	032282W		555	42	03	09	145	1969		017	0620	06	00	0	X		X7	5	8		0023

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		27	S04	921	-176	-178	7	12	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-X10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SVC
		STD	0000	-0167	3407	2744	0006484	0000	14402	796							
164		OBS	0000	-0167	34071	2744			14402	796	218		001	291	065	802	
		STD	0010	-0170	3406	2743	0006547	0007	14402	794							
164		OBS	0010	-0170	34061	2743			14402	794	235		001	294	068	801	
		STD	0020	-0170	3407	2744	0006510	0013	14404	793							
164		OBS	T0027	-0170	34068	2744			14405	792	234		000	295	070	800	
		STD	0030	-0169	3410	2747	0006237	0019	14407	786							
		STD	0050	-0165	3427	2760	0004931	0031	14414	751							
164		OBS	T0052	-0165	34278	2761			14415	748	229		001	299	080	771	
		STD	0075	-0173	3432	2765	0004512	0042	14415	735							
		STD	0100	-0179	3436	2768	0004175	0053	14417	725							
164		OBS	0104	-0180	34363	2768			14418	724	261		003	316	110	792	
		STD	0125	-0181	3437	2769	0004077	0064	14421	722							
		STD	0150	-0183	3437	2769	0004058	0074	14424	720							
148		OBS	0171	-0184	34375	2769			14427	719	237		002	303	091	781	
		STD	0200	-0183	3438	2770	0003949	0094	14432	719							
164		OBS	T0210	-0183	34381	2770			14434	719	181		015	240	058	790	
		STD	0250	-0181	3438	2770	0003926	0113	14442	718							
148		OBS	0273	-0180	34378	2769			14446	717	186		014	240	057	788	
		STD	0300	-0178	3438	2770	0003905	0133	14451	714							
148		OBS	T0377	-0173	34401	2771			14467	705	182		014	242	057	788	
		STD	0400	-0164	3442	2772	0003593	0171	14475	695							
148		OBS	0476	-0105	34482	2776			14516	632	205		015	272	064	784	
		STD	0500	-0039	3450	2774	0003544	0206	14551	546							
148		OBS	T0574	0040	3467P	2784P				480	218		014	286	068	780	
		STD	0600	0022	3454	2774	0003614	0242	14596	528							
148		OBS	0616	0000	34542	2776			14589	576	213		000	293	069	783	

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	74187S	032282W		555	42	03	09	145	1969		017	0620	06	00	0	X		X7	0	3		0024

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	27	S04	921	-176	-178	7	17	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-X10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	SVC
		STD	0000	-0181	3405	2743	0006628	0000	14395								
143		OBS	0000	-0181	34048	2743			14395								
		STD	0010	-0176	3405	2743	0006617	0007	14399								
		OBS	0010	-0176	34050	2743			14399								
		STD	0020	-0173	3409	2746	0006311	0013	14403								
001		OBS	0020	-0173	34090	2746			14403								
		OBS	0025	-0163	34150	2750			14409								
		STD	0030	-0163	3421	2755	0005402	0019	14411								
		OBS	0030	-0163	34211	2755			14411								
		STD	0050	-0182	3435	2767	0004305	0029	14407								
		OBS	0050	-0182	34346	2767			14407								
		STD	0075	-0186	3437	2769	0004111	0039	14410								
		OBS	0075	-0186	34368	2769			14410								
		STD	0100	-0187	3438	2769	0004024	0049	14414								
		OBS	0100	-0187	34377	2769			14414								
		STD	0125	-0188	3438	2770	0003990	0059	14417								
		OBS	0125	-0188	34379	2770			14417								
		STD	0150	-0188	3438	2770	0003944	0069	14422								
		OBS	0150	-0188	34383	2770			14422								
		STD	0200	-0188	3439	2770	0003874	0089	14430								
		OBS	0200	-0188	34388	2770			14430								
		STD	0250	-0182	3439	2771	0003831	0108	14441								
		OBS	0250	-0182	34392	2771			14441								
		STD	0300	-0183	3440	2771	0003737	0127	14449								
		OBS	0300	-0183	34400	2771			14449								
		STD	0400	-0142	3448	2777	0003223	0162	14486								
		OBS	0400	-0142	34480	2777			14486								
		STD	0500	-0008	3463	2783	0002775	0192	14567								
		OBS	0500	-0008	34626	2783			14567								
		STD	0600	0037	3471	2787	0002460	0218	14605								
		OBS	0600	0037	34707	2787			14605								
		OBS	0610	0037	34706	2787			14607								

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	SDEN SQUARE 10°	SDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR. 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
	318085	GL	74063S	032362W		555	42	03	11	205	1969		019	1500	15	00	0	X		X1	4	5		0025

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO. METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		19	S07	896	-163	-167	8	16	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₃-N µg-at/l	NO₂-N µg-at/l	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	-0177	3411	2748	0006145	0000	14398	807							
191		OBS	0000	-0177	34112	2748			14398	807	155		024	243	055	800	
		STD	0010	-0182	3411	2748	0006158	0006	14397	808							
191		OBS	0010	-0182	34108	2748			14397	808	169		015	245	055	798	
		STD	0020	-0184	3411	2748	0006132	0012	14398	814							
191		OBS	0026	-0185	34121	2749			14399	817	158		013	246	054	799	
		STD	0030	-0184	3416	2752	0005740	0018	14400	802							
		STD	0050	-0181	3430	2763	0004660	0029	14407	748							
191		OBS	0052	-0181	34313	2764			14408	745	200		014	289	065	791	
		STD	0075	-0184	3433	2766	0004408	0040	14410	735							
191		OBS	0077	-0184	34332	2766			14411	734	200		009	287	066	791	
		STD	0100	-0184	3434	2766	0004315	0051	14415	733							
		STD	0125	-0184	3434	2766	0004300	0062	14419	731							
191		OBS	0129	-0184	34343	2767			14420	731	204		003	293	066	789	
		STD	0150	-0184	3434	2767	0004255	0072	14423	728							
191		OBS	0181	-0183	34345	2767			14429	725	205		000	294	067	789	
		STD	0200	-0183	3435	2767	0004180	0093	14432	724							
		STD	0250	-0183	3436	2768	0004073	0114	14440	721							
191		OBS	T0282	-0184	34362	2768			14445		204		001	297	068	789	
		STD	0300	-0185	3437	2768	0003999	0134	14448	718							
191		OBS	0388	-0188	34382	2770			14461	712	196		000	298	068	785	
		STD	0400	-0173	3439	2770	0003789	0173	14470	699							
191		OBS	0491	-0080	34465	2773			14530	609	217		000	308	080	782	
		STD	0500	-0073	3448	2774	0003508	0210	14535	601							
191		OBS	T0593	-0011	34578	2779			14581	535	226		000	311	093	779	
		STD	0600	-0010	3458	2779	0003104	0243	14582	534							
		STD	0700	0011	3463	2782	0002859	0273	14609	513							
		STD	0800	0031	3466	2784	0002780	0301	14636	492							
		STD	0900	0052	3468	2784	0002794	0329	14662	471							
191		OBS	T0906	0053	34682	2784			14663	470	227		000	313	110	780	
		STD	1000	0049	3468	2784	0002779	0356	14677	473							
		STD	1100	0044	3468	2784	0002745	0384	14692	476							
191		OBS	1113	0043	34678	2784			14694	476	229		012	318	120	779	
		STD	1200	0035	3468	2785	0002689	0411	14705	500							
		STD	1300	0026	3468	2785	0002608	0438	14718	527							
191		OBS	T1368	0022	3449P	2770P				546	203		003	300	077	781	
		STD	1400	0019	3468	2786	0002548	0464	14731	529							
191		OBS	1466	0017	34679	2786			14742	497	237		001	321	121	780	
191		OBS	T1492	0017	34681	2786			14746	485	226		000	320	122	779	

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° '1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085	GL	73494S	031409W			555	31	03	12	115	1969		020	2360	24	00	0	X		X1	8	2		0026

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	ND. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	S05	903	-147	-150	8	25	

MESSENGER TIME OF DR HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. X 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SCO
		STD	0000	-0239	3405	2744	0006530	0000	14368	805							
	117	OBS	0000	-0239	34047	2744			14368	805	160		014	234	053	792	
		STD	0010	-0170	3404	2742	0006678	0007	14402	809							
	117	OBS	0010	-0170	34044	2742			14402	809	151		012	237	043	796	
		STD	0020	-0169	3405	2742	0006659	0013	14404	808							
	117	OBS	0026	-0168	34047	2742			14406	808	156		012	236	052	798	
		STD	0030	-0171	3411	2747	0006156	0020	14406	792							
		STD	0050	-0181	3432	2765	0004507	0030	14408	737							
	117	OBS	0052	-0182	34334	2766			14408	734	206		017	288	065	790	
		STD	0075	-0184	3434	2766	0004331	0041	14411	731							
	117	OBS	0078	-0184	34342	2767			14411	730	202		003	292	066	789	
		STD	0100	-0183	3436	2768	0004194	0052	14415	732							
	117	OBS	0104	-0183	34358	2768			14416	732	213		002	293	067	788	
		STD	0125	-0183	3436	2768	0004165	0062	14420	730							
		STD	0150	-0182	3436	2768	0004144	0073	14424	727							
	117	OBS	0156	-0182	34359	2768			14425	726	199		000	301	067	789	
		STD	0200	-0182	3437	2769	0004029	0093	14433	720							
	117	OBS	T0208	-0182	34373	2769			14434	719	205		000	295	068	789	
		STD	0250	-0180	3438	2769	0003959	0113	14442	718							
		STD	0300	-0178	3438	2770	0003905	0133	14451	717							
	117	OBS	T0306	-0178	34380	2769			14452	717	208		000	294	068	789	
		STD	0400	-0145	3440	2770	0003819	0172	14484	673							
	117	OBS	T0405	-0142	34407	2771			14486	670	210		000	293	073	788	
		STD	0500	-0051	3452	2776	0003325	0207	14546	579							
	117	OBS	0510	-0043	34529	2777			14551	571	223		000	312	088	779	
		STD	0600	0009	3461	2781	0002999	0239	14591	520							
	117	OBS	0610	0014	34616	2781			14595	515	224		000	315	097	780	
		STD	0700	0037	3465	2783	0002878	0268	14621	491							
		STD	0800	0054	3469	2785	0002712	0296	14646	464							
	117	OBS	0810		34696					461	222		000	321	106	779	
	150	OBS	T0858	0059	34692	2785			14658	468	221		000	322	119	786	
		STD	0900	0059	3469	2785	0002751	0324	14665	468							
		STD	1000	0058	3470	2785	0002727	0351	14682	468							
	117	OBS	T1006	0058	34697	2785			14683	468	216		000	325	115	779	
	150	OBS	T1059	0052	34694	2785			14689	513	221		000	322	115	781	
		STD	1100	0048	3469	2785	0002682	0378	14694	505							
		STD	1200	0041	3469	2785	0002659	0405	14708	487							
	117	OBS	T1256	0038	34687	2785			14716	476	217		000	322	118	780	
		STD	1300	0036	3469	2786	0002617	0431	14722	502							
	150	OBS	1312	0036	34693	2786			14724	508	232		000	322	119	781	
		STD	1400	0029	3469	2786	0002562	0457	14736	513							
		STD	1500	0022	3469	2786	0002531	0482	14750	519							
	150	OBS	1566	0018	34682	2786			14759	522	233		000	325	122	780	
		STD	1750	0012	3468	2786	0002474	0545	14788	529							
	150	OBS	1872	0008	34676	2786			14807	533	233		000	322	122	780	
		STD	2000	0004	3468	2786	0002425	0606	14827	516							
	150	OBS	T2068	0002	34675	2786			14838	515	222		000	322	122	782	
	150	OBS	T2172	-0001	34674	2786			14854	524	227		000	322	120	782	
	150	OBS	2281	-0004	34678	2787			14872	524	236		000	324	122	781	
	150	OBS	T2332	-0008	34668	2786			14878	524	213		000	322	124	781	
	150	OBS	T2358	-0010	34694	2788			14882	520	219		000	322	126	783	

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	1/10	1/10	INDCTR	10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085	GL	73290S	030241W			555	30	03	14	055	1969		022	3109	31	31	0	2		X2	7	8		0027

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		31	S10	893	-050	-058	8	24	

MESSENGR TIME OF T HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-$\times 10^7$	$\Sigma\Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	QQQ
		STD	0000	-0151	3405	2742	0006725	0000	14410	799							
056		OBS	0000	-0151	34045	2742			14410	799	137		013	219	052	797	
		STD	0010	-0150	3404	2741	0006783	0007	14412	804							
056		OBS	0010	-0150	34037	2741			14412	804	145		013	216	051	800	
		STD	0020	-0141	3405	2742	0006703	0013	14418	813							
056		OBS	0025	-0136	34057	2742			14421	815	147		013	218	052	801	
		STD	0030	-0128	3407	2743	0006583	0020	14426	815							
		STD	0050	-0112	3414	2748	0006066	0033	14437	805							
056		OBS	0050	-0112	34143	2748			14437	805	203		010	241	054	800	
		STD	0075	-0154	3428	2761	0004872	0046	14424	756							
		STD	0100	-0179	3436	2768	0004183	0058	14417	726							
056		OBS	0100	-0179	34359	2768			14417	726	199		025	294	067	790	
		STD	0125	-0179	3437	2769	0004083	0068	14422	724							
		STD	0150	-0180	3437	2769	0004058	0078	14425	722							
056		OBS	0150	-0180	34371	2769			14425	722	201		000	298	068	789	
		STD	0200	-0183	3438	2769	0003989	0098	14432	716							
056		OBS	T0203	-0183	34375	2769			14433	716	201		000	293	067	790	
		STD	0250	-0182	3438	2770	0003923	0118	14441	715							
		STD	0300	-0181	3439	2770	0003858	0138	14450	714							
056		OBS	0300	-0181	34385	2770			14450	714	204		000	300	068	789	
056		OBS	T0399	-0164	34403	2771			14475	686	201		000	298	070	789	
		STD	0400	-0163	3440	2771	0003719	0176	14475	685							
056		OBS	T0499	-0109	34470	2775			14518	622	207		000	304	078	788	
		STD	0500	-0108	3447	2775	0003400	0211	14519	621							
		STD	0600	-0017	3454	2777	0003329	0245	14579	545							
		STD	0700	0043	3462	2779	0003192	0277	14624	492							
056		OBS	T0797	0070	34687	2783			14653	463	204		000	307	104	782	
		STD	0800	0070	3469	2784	0002852	0308	14653	463							
		STD	0900	0063	3469	2784	0002809	0336	14667	458							
087		OBS	T0920	0062	34692	2784			14670	457	222		000	320	110	782	
		STD	1000	0060	3470	2785	0002750	0364	14683	461							
056		OBS	1000	0060	34696	2785			14683	461	230		000	319	111	780	
		STD	1100	0053	3469	2785	0002739	0391	14696	466							
087		OBS	T1111	0052	34690	2785			14698	466	221		000	321	116	781	
		STD	1200	0045	3469	2785	0002686	0418	14709	469							
056		OBS	T1250	0042	34690	2785			14717	470	230		000	321	117	781	
		STD	1300	0039	3469	2785	0002677	0445	14724	467							
087		OBS	1310	0038	34684	2785			14725	466	221		000	321	118	781	
		STD	1400	0033	3468	2785	0002639	0472	14738	473							
		STD	1500	0027	3468	2785	0002602	0498	14752	480							
087		OBS	1510	0026	34681	2786			14753	481	223		000	323	121	783	
		STD	1750	0025	3468	2786	0002599	0563	14794	496							
087		OBS	1811	0022	34678	2786			14803	499	224		000	320	122	786	
		STD	2000	0005	3467	2786	0002472	0626	14827	506							
087		OBS	T2013	0004	34669	2786			14829	507	227		000	321	123	782	
087		OBS	T2216	-0001	34663	2786			14862	519	226		000	321	120	783	
		STD	2500	-0008	3466	2786	0002353	0747	14907	527							
087		OBS	2524	-0009	34664	2786			14911	528	224		000	321	119	788	
087		OBS	2837	-0014Q	34661	27860				523	219		001	313	118	789	
		STD	3000	-0009	3466	2786	0002338	0864	14994	537							
087		OBS	T3056	-0017	34658	2786			15000	538	222		000	319	121	788	
087		OBS	T3093	-0023	34650	27860				538							

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	NO.		° 1/10	° 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085		GL	72475S	030283W		555	20	03	15	025	1969		023	3658	35	00	0	X		X8	7	8			0028

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		05	S13	846	-036	-047	7	27	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-$\pm 10^7$	$\Sigma\Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	-0161	3388	2729	0007966	0000	14402	829							
003		OBS	0000	-0161	33880	2729			14402	829	113		013	200	050	799	
003		OBS	0008	-0164	33879	2729			14402	828	121		013	196	050	802	
		STD	0010	-0160	3388	2728	0007962	0008	14405	828							
		STD	0020	-0142	3389	2729	0007927	0016	14415	825							
003		OBS	0021	-0140	33898	2729			14416	825	127		013	202	050	801	
		STD	0030	-0116	3399	2736	0007234	0023	14430	809							
003		OBS	0042	-0100	34102	2745			14441	788	167		013	247	057	799	
		STD	0050	-0120	3417	2751	0005833	0037	14434	773							
		STD	0075	-0166	3433	2765	0004455	0049	14419	738							
003		OBS	0084	-0176	34361	2768			14416	729	213		022	282	067	789	
		STD	0100	-0177	3437	2769	0004103	0060	14418	722							
		STD	0125	-0179	3438	2769	0004029	0070	14422	715							
003		OBS	0125	-0179	34377	2769			14422	715	201		021	296	069	789	
		STD	0150	-0180	3438	2770	0003988	0080	14425	715							
003		OBS	T0167	-0181	34384	2770			14428	715	201		004	299	070	789	
		STD	0200	-0179	3439	2770	0003884	0100	14434	704							
003		OBS	0244	-0177	34404	2771			14443	686	214		002	301	074	789	
		STD	0250	-0176	3441	2772	0003735	0119	14444	686							
		STD	0300	-0154	3443	2773	0003591	0137	14463	667							
003		OBS	T0323	-0133	34443	2773			14477	648	205		002	300	079	786	
		STD	0400	-0012	3456	2778	0003259	0172	14548	538							
003		OBS	0405	-0006	34569	2778			14551	532	214		001	297	095	781	
		STD	0500	0036	3463	2781	0003028	0203	14587	495							
		STD	0600	0063	3468	2783	0002849	0232	14617	469							
003		OBS	T0663	0072	34695	2784			14632	458	220		001	297	111	779	
		STD	0700	0069	3470	2784	0002793	0261	14636	457							
		STD	0800	0062	3470	2785	0002752	0288	14650	455							
003		OBS	T0843	0060	34695	2785			14656	454	220		000	299	116	779	
035		OBS	T0880	0059	34701	2785			14662	461	214		000	310	115	779	
		STD	0900	0055	3470	2785	0002669	0315	14664	463							
		STD	1000	0043	3470	2786	0002581	0342	14675	469							
003		OBS	T1079	0042	34697	2786			14688	472	226		000	318	117	779	
		STD	1100	0043	3470	2786	0002617	0368	14692	473							
035		OBS	T1120	0044	34695	2786			14696	473	215		000	316	120	778	
		STD	1200	0039	3469	2786	0002612	0394	14707	476							
		STD	1300	0033	3469	2786	0002580	0420	14721	481							
035		OBS	1360	0029	34690	2786			14729	484	215		000	313	127	779	
		STD	1400	0027	3469	2786	0002537	0445	14735	488							
		STD	1500	0021	3469	2787	0002485	0471	14749	496							
035		OBS	1650	0014	34688	2787			14772	503	216		000	314	124	778	
		STD	1750	0011	3468	2786	0002464	0532	14787	504							
035		OBS	1864	0007	34676	2786			14805	505	217		000	312	124	779	
		STD	2000	0001	3468	2787	0002380	0593	14826	512							
035		OBS	2040	0000	34677	2787			14832	514	216		000	315	122	779	
035		OBS	T2334	-0009	34675	2787			14878	526	216		000	316	124	775	
		STD	2500	-0012	3467	2787	0002244	0709	14906	532							
035		OBS	T2636	-0014	34671	2787			14928	535	215		000	315	125	779	
035		OBS	2834	-0017	34670	2787			14961	538	216		000	311	121	779	
		STD	3000	-0018	3467	2787	0002159	0819	14990	541							
035		OBS	3036	-0018	34668	2787			14996	542	213		000	314	122	779	
035		OBS	3238	-0023	34643	2785			15029	548	215		000	315	123	779	
035		OBS	3441	-0023	34666	2787			15065	555	214		000	314	122	779	
035		OBS	T3475	-0024	34664	2787			15071	553	213		001	311	123	779	
035		OBS	T3500	-0023	34665	2787			15076	546	211		000	314	121	780	

REFERENCE		SHIP	LATITUDE	LONGITUDE	SHIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	NO.	CODE	1/10	1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085	GL	71361S	030361W			555	10	03	16	025	1969		024		3848	35	00	0	x		x1	7	7		0029

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		09	S04	877	-033	-045	8	24	

MESSENGR TIME OF HR 1/10	CAST NO.	CNRO TYPE	DEPTH (m)	T °C	S ‰	SIGMA-1	SPECIFIC VOLUME ANOMALY-10⁷	ΔD DYN. M. X 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	NO₃-N µg-at/l	SiO₄-Si µg-at/l	pH	QUAL
		STD	0000	-0185	3406	2744	0006527	0000	14394	820							
	014	OBS	0000	-0185	34060	2744			14394	820	144		008	234	066	794	
		STD	0010	-0185	3406	2744	0006535	0007	14395	831							
	014	OBS	0010	-0185	34058	2744			14395	831	147		009	235	065	800	
		STD	0020	-0186	3405	2743	0006558	0013	14397	829							
	014	OBS	0026	-0186	34052	2743			14397	828	155		009	236	065	800	
		STD	0030	-0185	3412	2749	0006047	0019	14400	800							
		STD	0050	-0177	3440	2771	0003902	0029	14410	693							
	014	OBS	0051	-0177	34410	2772			14411	689	199		009	285	077	789	
		STD	0075	-0178	3442	2773	0003731	0039	14414	687							
		STD	0100	-0180	3443	2774	0003636	0048	14418	685							
	014	OBS	0102	-0180	34433	2774			14418	685	208		002	292	078	785	
		STD	0125	-0170	3444	2774	0003572	0057	14427	668							
		STD	0150	-0154	3445	2775	0003531	0066	14439	648							
	014	OBS	0152	-0152	34456	2775			14440	646	210		000	000	081	786	
		STD	0200	-0103	3450	2777	0003311	0083	14472	598							
	014	OBS	T0204	-0099	34504	2777			14474	594	215		000	300	088	783	
		STD	0250	-0034	3457	2780	0003082	0099	14513	540							
		STD	0300	0019	3463	2782	0002917	0114	14546	498							
	014	OBS	T0306	0024	34633	2782			14550	494	218		000	304	099	780	
		STD	0400	0066	3469	2784	0002808	0143	14585	464							
	014	OBS	T0410	0068	34690	2784			14588	462	218		000	313	106	779	
		STD	0500	0071	3470	2784	0002756	0170	14604	458							
	014	OBS	T0514	0071	34699	2784			14606	457	218		000	312	111	780	
		STD	0600	0065	3470	2785	0002721	0198	14618	458							
		STD	0700	0058	3470	2785	0002688	0225	14631	459							
		STD	0800	0051	3470	2785	0002651	0252	14645	460							
	014	OBS	T0812	0050	34697	2785			14647	460	225		002	310	118	780	
		STD	0900	0044	3469	2785	0002657	0278	14659	467							
		STD	1000	0038	3469	2786	0002615	0305	14673	474							
	014	OBS	1020	0037	34689	2786			14676	475	233		002	317	120	780	
		STD	1100	0033	3469	2786	0002592	0331	14687	478							
		STD	1200	0027	3469	2786	0002564	0356	14701	482							
	038	OBS	1204	0027	34686	2786			14702	482	219		000	312	121	779	
	014	OBS	T1280	0025	34686	2786			14714	484	229		000	315	123	780	
		STD	1300	0024	3469	2786	0002539	0382	14717	486							
		STD	1400	0018	3469	2786	0002487	0407	14731	495							
	038	OBS	T1441	0016	34686	2786			14737	498	220		000	322	120	781	
		STD	1500	0014	3468	2786	0002466	0432	14746	503							
	015	OBS	T1546	0012	34683	2786			14753	506	229		003	310	125	775	
	038	OBS	1746	-0007	34682	2787			14778	508	220		000	321	120	780	
		STD	1750	-0007	3468	2787	0002294	0491	14779	508							
	038	OBS	1946	-0005	34669	2786			14813	519	223		000	318	121	784	
		STD	2000	-0006	3467	2786	0002369	0550	14822	524							
	038	OBS	2247	-0012	34667	2786			14862	536	218		000	318	119	782	
	038	OBS	2449	-0017	34667	2787			14895	535	224		000	311	120	782	
		STD	2500	-0018	3467	2787	0002221	0664	14903	538							
	038	OBS	T2651	-0021	34667	2787			14928	544	217		000	314	121	785	
	038	OBS	2954	-0022	34669	2787			14980	550	219		000	316	120	782	
		STD	3000	-0023	3467	2787	0002110	0773	14988	550							
	038	OBS	T3175	-0025	34665	2787			15017	550	215		000	311	120	782	
	038	OBS	T3464	-0027	34667	2787			15067	554	217		000	311	120	782	

REFERENCE: CTRY CODE	REFERENCE: ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	MARSDEN SQUARE: 10°	MARSDEN SQUARE: 1°	STATION TIME (GMT): MO	STATION TIME (GMT): DAY	STATION TIME (GMT): HR.1/10	YEAR	ORIGINATOR'S: CRUISE NO.	ORIGINATOR'S: STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS: DIR.	WAVE OBSERVATIONS: HGT	WAVE OBSERVATIONS: PER	WAVE OBSERVATIONS: SEA	WEATHER CODE	CLOUD CODES: TYPE	CLOUD CODES: AMT		NODC STATION NUMBER
318	085	GL	70388S	033323W		55	5	03	17	056	1969		025	4297	34	00	0	X		X7	X	9		0030

WATER: COLOR CODE	WATER: TRANS. (m)	WIND: DIR.	WIND: SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C: DRY BULB	AIR TEMP. °C: WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
		17	S06	878	-056	-067	4	21	

MESSENGR TIME or HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	QUAL
		STD	0000	-0183	3400	2739	0006992	0000	14394	812							
068		OBS	0000	-0183	34000	2739			14394	812	148		009	257	066	800	
		STD	0010	-0183	3399	2738	0007032	0007	14395	813							
068		OBS	0010	-0183	33994	2738			14395	813	160		010	252	066	799	
		STD	0020	-0184	3399	2738	0007022	0014	14396	813							
068		OBS	0027	-0185	33994	2738			14397	813	157		009	258	066	799	
		STD	0030	-0184	3405	2743	0006586	0021	14399	796							
		STD	0050	-0177	3437	2769	0004133	0032	14410	704							
068		OBS	0053	-0176	34405	2771			14412	694	195		005	287	076	790	
		STD	0075	-0178	3442	2773	0003733	0041	14415	686							
		STD	0100	-0180	3443	2774	0003637	0051	14418	676							
068		OBS	0106	-0180	34432	2774			14419	674	203		004	290	078	790	
		STD	0125	-0174	3443	2774	0003621	0060	14425	667							
		STD	0150	-0167	3443	2773	0003621	0069	14432	657							
068		OBS	0159	-0164	34433	2773			14435	654	194		000	296	079	789	
		STD	0200	-0078	3452	2778	0003264	0086	14483	580							
068		OBS	0212	-0057	34536	2778			14495	562	214		000	321	090	784	
		STD	0250	-0008	3459	2780	0003068	0102	14525	522							
		STD	0300	0038	3465	2782	0002881	0117	14555	484							
068		OBS	T0317	0050	34659	2782			14564	475	223		000	311	101	780	
		STD	0400	0070	3469	2784	0002798	0145	14587	461							
068		OBS	0421	0072	34692	2784			14591	459	219		000	314	107	781	
		STD	0500	0069	3470	2784	0002759	0173	14603	460							
068		OBS	T0531	0068	34698	2784			14608	460	223		000	322	112	780	
		STD	0600	0064	3470	2785	0002728	0200	14617	461							
		STD	0700	0057	3470	2785	0002703	0227	14631	461							
		STD	0800	0051	3469	2785	0002681	0254	14645	462							
068		OBS	T0835	0049	34692	2785			14650	462	227		000	326	117	781	
		STD	0900	0045	3469	2785	0002665	0281	14659	465							
		STD	1000	0038	3469	2786	0002615	0307	14673	470							
068		OBS	T1042	0036	34684	2785			14679	472	228		000	327	119	781	
		STD	1100	0033	3468	2785	0002654	0334	14687	473							
		STD	1200	0028	3468	2785	0002615	0360	14702	476							
		STD	1300	0023	3468	2786	0002575	0386	14716	480							
045		OBS	T1321	0022	34679	2786			14719	481	227		000	319	116	781	
		STD	1400	0018	3468	2786	0002554	0412	14731	487							
		STD	1500	0014	3468	2786	0002533	0437	14746	494							
045		OBS	T1561	0011	34674	2786			14755	498	227		000	324	117	781	
		STD	1750	0003	3467	2786	0002462	0500	14784	503							
045		OBS	1877	-0002	34665	2786			14803	508	224		000	311	123	780	
		STD	2000	-0007	3466	2786	0002403	0560	14822	515							
045		OBS	2080	-0009	34662	2786			14834	519	228		000	314	124	779	
045		OBS	2284	-0013	34671	2787			14868	526	221		000	314	123	779	
		STD	2500	-0017	3467	2787	0002210	0676	14903	530							
045		OBS	2589	-0019	34668	2787			14918	533	225		000	313	121	782	
045		OBS	T2778	-0022	34661	2786			14949	541	225		000	313	123	780	
		STD	3000	-0025	3466	2787	0002137	0784	14987	553							
045		OBS	3097	-0026	34661	2787			15003	555	227		004	309	122	779	
045		OBS	T3402	-0028	34659	2787			15056	552	224		000	311	120	781	

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	1/10	1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085	GL	68368S	032036W			519	82	03	18	055	1969		026	4483	11	00	0	X		X2	7	8		0031

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		10	S06	842	-023	-039	7	13	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	-0165	3387	2728	0008041	0000	14400	801							
062		OBS	0000	-0165	33869	2728			14400	801	159		014	253	072	797	
062		OBS	0008	-0165	33862	2727			14402	804	170		013	256	071	795	
		STD	0010	-0165	3386	2727	0008103	0008	14402	805							
		STD	0020	-0165	3386	2727	0008097	0016	14404	807							
062		OBS	0022	-0165	33857	2727			14404	808	153		014	252	071	798	
		STD	0030	-0164	3387	2727	0008047	0024	14406	808							
062		OBS	0044	-0162	33883	2729			14409	795	170		009	250	072	796	
		STD	0050	-0162	3399	2737	0007088	0039	14412	771							
		STD	0075	-0161	3432	2764	0004545	0054	14421	682							
062		OBS	0087	-0161	34428	2773			14425	647	215		006	295	083	791	
		STD	0100	-0162	3446	2776	0003457	0064	14427	616							
		STD	0125	-0163	3451	2780	0003057	0072	14431	567							
062		OBS	0129	-0163	34520	2780			14432	560	223		000	302	091	785	
		STD	0150	-0079	3456	2781	0002969	0080	14475	528							
062		OBS	T0171	-0009	34593	2780			14512	509	227		000	313	100	782	
		STD	0200	0014	3463	2782	0002919	0094	14527	525							
		STD	0250	0046	3468	2785	0002678	0108	14551	552							
062		OBS	0256		34690					555	233		000	311	110	780	
		STD	0300	0066	3470	2785	0002682	0122	14568	484							
062		OBS	T0339	0074	34703	2784			14579	446	227		000	320	112	779	
		STD	0400	0070	3470	2785	0002715	0149	14587	445							
062		OBS	T0425	0068	34700	2785			14590	444	230		000	316	115	781	
		STD	0500	0063	3470	2785	0002686	0176	14600	445							
		STD	0600	0057	3470	2785	0002655	0202	14614	447							
062		OBS	0682	0052	34693	2785			14626	448	234		000	322	120	778	
		STD	0700	0051	3469	2785	0002695	0229	14628	449							
		STD	0800	0046	3469	2785	0002666	0256	14643	453							
062		OBS	T0852	0043	34689	2785			14650	456	231		000	318	124	782	
		STD	0900	0040	3469	2785	0002641	0282	14657	458							
		STD	1000	0034	3469	2786	0002606	0309	14671	464							
062		OBS	T1072	0030	34686	2786			14681	468	234		000	327	125	781	

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318085	GL	64506S	041247W			520	41	03	20	145	1969		027	4572	22	26	0	5		X9	6	5		0032

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		26	505	925	-009	-012	8	14	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	NO_3-N µg-at/l	SiO_4-Si µg-at/l	pH	SECCHI
		STD	0000	-0021	3393	2727	0008091	0000	14468	774							
138		OBS	0000	-0021	33927	2727			14468	774	140		007	197	075	793	
		STD	0010	-0024	3392	2727	0008121	0008	14469	774							
138		OBS	0010	-0024	33921	2727			14469	774	142		005	192	075	799	
		STD	0020	-0072	3407	2741	0006781	0016	14450	734							
		STD	0030	-0111	3419	2752	0005718	0022	14435	702							
		STD	0050	-0167	3437	2768	0004190	0032	14415	658							
138		OBS	0050	-0167	34366	2768			14415	658	211		009	277	085	778	
		STD	0075	-0171	3438	2769	0004058	0042	14417	663							
156		OBS	0096	-0174	34428	2773			14420	667	190		007	296	086	774	
		STD	0100	-0165	3444	2774	0003608	0052	14425	645							
138		OBS	0100	-0165	34439	2774			14425	645	212		008	289	086	774	
		STD	0125	-0108	3446	2774	0003625	0061	14456	600							
		STD	0150	-0064	3449	2775	0003568	0070	14481	562							
156		OBS	0197	-0022	34591	2781			14510	504	206		003	313	103	768	
		STD	0200	-0021	3460	2781	0002935	0086	14511	501							
138		OBS	0200	-0021	34599	2781			14511	501	225		007	325	104	768	
		STD	0250	0024	3457	2785	0002643	0100	14541	465							
156		OBS	0298	0055	34692	2785			14563	430	224		001	331	118	764	
		STD	0300	0055	3469	2785	0002671	0113	14563	501							
138		OBS	0300		34692					501	242		005	327	115	768	
		STD	0400	0052	3470	2786	0002600	0139	14579	465							
156		OBS	0499	0048	34701	2786			14593	442	230		001	331	124	764	
		STD	0500	0048	3470	2786	0002574	0165	14594	442							
		STD	0600	0043	3470	2786	0002584	0191	14608	437							
		STD	0700	0038	3469	2786	0002593	0217	14622	432							
156		OBS	0701	0038	34691	2786			14622	432	216		019	333	124	768	
		STD	0800	0033	3469	2786	0002576	0243	14637	433							
		STD	0900	0028	3469	2786	0002549	0269	14651	433							
		STD	1000	0023	3469	2786	0002528	0294	14666	434							
		STD	1100	0018	3468	2786	0002504	0319	14680	434							
		STD	1200	0013	3468	2786	0002478	0344	14695	435							
156		OBS	T1205	0013	34682	2786			14696	435	217		001	322	126	771	
		STD	1300	0009	3469	2787	0002418	0368	14710	454							
		STD	1400	0006	3469	2787	0002368	0392	14726	471							
		STD	1500	0002	3469	2788	0002307	0416	14741	486							
156		OBS	T1712	-0005	34698	2789			14774	509	225		000	320	124	770	
		STD	1750	-0006	3470	2788	0002185	0472	14780	510							
		STD	2000	-0014	3469	2788	0002172	0526	14819	515							
156		OBS	T2222	-0020	34675	2787			14854	519	229		006	320	125	770	

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